The Strategic Review of Charges 2006-10: The draft determination:

The proposed charge caps - an executive summary



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Key messages for customers

Our • In setting charges, we have established our view of the lowest reasonable overall cost to deliver the ministerial objectives. approach • We believe that there is significant scope for a determined management to out-perform this draft determination. • Such out-performance would benefit customers in future regulatory control periods. Impact on • The vast majority of households would see their bills increase by 2% in 2006-07 and 2007-08. There would be no increase in 2008-09 and 2009-10. customers' · Most non-household bills would fall by 2.1% in 2008-09. There would be no change in the other years bills of this regulatory control period. · In line with the Ministerial Guidance on the principles of charging: - a new 25% discount for households in receipt of Council Tax benefit has been introduced; - £44 million of cross-subsidy from non-household to household customers has been unwound; and - second home owners and some higher banded households who benefited from the transitional relief scheme will see larger increases in their bills. Benefits to · These charge caps would allow all of the 'essential' and 'desirable' objectives of the Scottish Ministers to be met. customers · There should be no reason for development constraints - ministerial objectives allow for an area the size of central Edinburgh to be developed for commercial purposes. Additionally, investment is available to connect 15,000 homes a year in previously development-constrained areas. • The total investment programme for 2006 -10 is £2.1 billion (in 2003 -04 prices). It is the largest programme of investment in Scotland's water industry in recent times. · This is the second largest absolute investment programme in the UK for 2006-10 (behind Thames Water). • It is the largest per property investment programme in the UK in the 2006-10 regulatory control period. Effect on · If it were to perform in line with this draft determination, Scottish Water would comply with all Scottish of the cash-based financial ratios used by Ofwat to measure the financial strength of the water and sewerage industry south of the border. Water · Its financial strength, measured by the debt to regulatory capital value ratio, improves during the regulatory control period. · Our prudent approach to the financing of the Scottish water industry means that both current and future generations of customers will pay a fair price for the level of service they receive. Comparison • In England and Wales the average household bill will increase by about 30% in nominal terms between 2005 and 2010. In Scotland, we can afford a large investment programme with much lower increases with England and Wales - Scottish Water is on track to deliver some £145 million annually of operating cost efficiencies in real terms in its first four years: - there remains further scope to improve the efficiency of the water industry in Scotland; and customers benefit from Scottish Water having access to borrowing from Government at lower than market rates. • Average household bills (at £303) would be the third lowest in the UK in 2009-10. **Prospects for** · Charges in the 2010-14 regulatory control period would remain broadly stable in real terms-providing there is future bills no further substantial increase in the cost of the investment programme and Scottish Water performs in line with this draft determination. **Next steps** • There is now an opportunity for stakeholders to comment on this draft determination. · Representations to the new Water Industry Commission should be submitted by 23 September 2005. • The new Commission will consider representations and issue a final determination of charges at the end of November 2005. · Scottish Water may refer the final determination to the Competition Commission. The Competition Commission would have to decide whether the reasonable overall cost of delivering the ministerial objectives is higher or lower than was set in the final determination. As such it could increase or decrease charges to customers.

Foreword

On 26 May 2004, Ross Finnie MSP, the Minister for Environment and Rural Affairs, asked me to begin work on the Strategic Review of Charges for the 2006-10 regulatory control period. In his commissioning letter, he outlined the implications of the Scottish Executive's proposals to strengthen regulation. The Water Services etc. (Scotland) Act 2005 will now require the new Water Industry Commission to determine the maximum level of charges that Scottish Water should be allowed to levy on its customers. On 9 February 2005, Lewis Macdonald MSP, Deputy Minister for the Environment and Rural Development, in a statement to the Scottish Parliament, announced the Scottish Executive's objectives for Scottish Water in the period 2006-14 and also the principles to be applied in setting water charges in the period 2006-10.

I am now publishing a draft determination of charges for the 2006-10 regulatory control period. This draft determination is consistent with the terms of the Deputy Minister's February statement. It will be for the new Water Industry Commission to consider representations from Scottish Water, from customers and from other stakeholders and to prepare a final determination. I expect that this final determination will be published at the end of November this year. It is important that stakeholders make their views known to the new Commission by 23 September 2005.

My focus at this Strategic Review of Charges has been to ensure that I have established a robust and transparent process and have set charges that are no higher than necessary to meet Ministers' objectives for the industry. I am pleased to say that my draft determination has proposed charge caps which ensure that most customers paying tariffs within Scottish Water's scheme of charges will see stability in their water and sewerage charges over the next four years, and, indeed, some reduction in real terms.

Between 2006 and 2010, the customer will benefit from the largest per property investment programme in the water and sewerage industry in Great Britain. By 2010, Scotland will have invested some 8% more per connected property since 1984 than the average in England and Wales.

The creation of Scottish Water has brought benefits to customers throughout Scotland. Customers in all parts of Scotland are now paying less than they would have paid if Scottish Water had not been established. Years of worsening efficiency in the Scottish water industry have been halted. I am pleased to say that Scottish Water has risen to the challenge that I set in the Strategic Review of Charges 2002-06. It now looks very likely that Scottish Water will have reduced its operating costs by some £145 million in real terms since 2001.

Rigorous, objective regulation is therefore beginning to deliver real value to customers. However, it is important that we continue to build on this early success, by adapting regulatory tools to the special circumstances of Scotland, where water services continue to be provided by the public sector. I therefore welcome the strengthened regulatory regime. The introduction of the new Water Industry Commission for Scotland with the power to decide, rather than to advise, on charges should help to make regulation more transparent. It should also improve customers understanding of the impact on their bills of decisions made by Ministers and by the new Commission.

In this draft determination I have made proposals for implementing an interim determination process that will allow any unexpected costs that are outside the control of management to be addressed in an efficient and effective way. I have also included proposals that would align the interests of customers with the incentives available to the management of Scottish Water.

Notwithstanding the considerable improvement that has been made by Scottish Water, more remains to be done. There is scope for further improvement in the efficiency of operating costs; the efficiency and effectiveness of capital investment; and the level of customer service. It is particularly important that Scottish Water improves its understanding of its assets and ensures that its investment is targeted effectively and efficiently.

The charge limits also allow for a significant improvement in the level of service that is provided to customers. The allowed for level of operating costs and the funded investment programme include significant

resources to begin to manage leakage and ensure that Scotland reaches its economic level of leakage no later than 2014. Significant progress in improving water pressure and reducing odour problems will also be made. In line with the Ministers' guidance, I have allowed sufficient funding to ensure that more than 20 square kilometres (an area equivalent to the centre of Edinburgh) becomes available for commercial development and, additionally, for 60,000 new houses to be built in areas that could not previously have been developed.

In this draft determination I have adopted an approach to charge setting that will facilitate comparison of the financial sustainability of the water industry in Scotland with that of the industry south of the border. I have set charge caps such that Scottish Water will be in a strong financial position if it were to perform in line with the assumptions underpinning this draft determination.

My charge caps should, therefore, enable customers to look forward to further significant improvements in the level of service and in environmental and public health compliance without a return to the significant price increases of the recent past.

This draft determination has been prepared in line with the Better Regulation Task Force principles of accountability, transparency, proportionality, consistency and targeting. As such, I have published all of the key information submissions that I have received from Scottish Water, as well as the tools that I have used to complete my analysis, including the financial and tariff basket models.

In closing, I would like to thank all those who have attended the stakeholder information days over the last year and found time to explain their views to me. I am also grateful to the many organisations, representing the whole range of stakeholders – from the most vulnerable of domestic customers to businesses, large and small – that have contributed to the debate.

I would particularly like to thank my three senior advisors: Sir Ian Byatt, John Banyard OBE and Professor David Simpson. Their advice and assistance has been invaluable. I am also most grateful to Thomas Sharpe QC and his legal team for their detailed review of this draft determination. Finally, I must highlight the contribution of the whole team in my office to what, I consider, is a thorough draft determination.

I believe that this draft determination proposes a significant, but realistic, challenge to Scottish Water. As in 2001, this is a challenge which all of us, as customers, have a right to expect will be met.

Alan D A Sutherland

Water Industry Commissioner for Scotland June 2005

ALPA hold

Executive summary

This draft determination sets out the current views of the Water Industry Commissioner for Scotland on the charge caps that will allow Scottish Water to achieve all the 'essential' and 'desirable' investment objectives of the Scottish Ministers for the water industry for the regulatory control period 2006-10. We invite all stakeholders to convey their views to the Water Industry Commission for Scotland no later than 23 September 2005. The new Commission, which will replace the Water Industry Commissioner on commencement of the Water Services etc. (Scotland) Act 2005, will carefully consider Scottish Water's representations, and those of all other stakeholders, before reaching its final determination in November 2005.

Representations should be sent to:

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Printed copies of the draft determination are available from the address above. Electronic versions are also available on CD, and on our website at www.watercommissioner.co.uk. Our financial and tariff basket models are also available on our website.

In preparing this draft determination of charges, we have adopted the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency and targeting. The draft determination is presented in seven volumes with one additional volume of appendices.

Most stakeholders will find all of the information they need in this volume. Volumes 2 to 7 set out our detailed analysis and are intended as a complete record of our work.

This executive summary begins with an overview of the legal framework and how we have applied RPI-X incentive regulation to the public sector water industry in Scotland. It continues by outlining the very significant capital investment programme that Scottish Water will be required to deliver in the 2006-10 regulatory control period. We then discuss how we should set charges and how we calculate the lowest reasonable overall level of costs which would be required for Scottish Water to meet the objectives it has been set.

We conclude with a detailed outline of the charge caps that we propose to set and an indication of the prospects for future charges.

The legal framework

There have been two principal changes to the legislative framework since the Strategic Review of Charges 2002-06:

- The Water Industry (Scotland) Act 2002; and
- The Water Services etc. (Scotland) Act 2005.

The Water Industry (Scotland) Act 2002

The Water Industry (Scotland) Act 2002, which had the principal function of establishing Scottish Water, also limited the function of this Office to promoting the interests of customers of Scottish Water's core business. As a result, the current Strategic Review of Charges focuses only on Scottish Water's core activities of providing water and sewerage services to customers in Scotland.

The Water Services etc. (Scotland) Act 2005

In 2005, the Water Services etc. (Scotland) Act further strengthened the regulatory framework.

The Act has two main functions:

- It creates a Water Industry Commission to replace the current Water Industry Commissioner. The Commission will have the power to determine (rather than to advise Ministers on) the maximum level of charges required to ensure that the objectives of the Scottish Ministers can be met at lowest reasonable overall cost.
- It introduces a framework for competition in the water industry that is consistent with the social, environmental and public health objectives of the Scottish Ministers.

If Scottish Water disputes the charge limits, it can require the new Water Industry Commission to refer the final determination to the Competition Commission. The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators.

Ministerial Guidance

We received detailed guidance from Scottish Ministers in February 2005 in the form of a draft statement of principles regarding charges and a draft direction on the investment objectives that should be delivered by Scottish Water. The investment objectives were divided into 'essential' and 'desirable' outputs. This draft determination allows all of the investment objectives of Scottish Ministers (both 'essential' and 'desirable') to be met. It also complies with the statement of policy regarding charging. In particular, the draft determination sets charge limits to ensure that prices are affordable, stable over the Review period and sustainable in the long term.

The role of regulation

Normally competition can be relied upon to guarantee the protection of consumers' needs and efficient production. However, in Scotland the provision of water and sewe rage services are virtual monopolies. The purpose of regulation in the present case is to ensure that the monopoly business operates in the customer interest. RPI-X regulation limits the real level of prices that companies are allowed to charge their customers. The

regulated company then has to decide how to deliver the required level of service for the revenue that is available to it. This focuses management's attention on reducing costs.

All UK economic regulators adopt an incentive-based approach to determining prices. The analysis is complex and thorough, but essentially the regulator analyses the scope for improvement in performance and provides incentives for its achievement.

A determined management may out-perform the targets and in doing so will benefit both the shareholder and, ultimately, customers. This is because out-performance will also raise the level of performance expected over the next regulatory control period. It is this 'ratchet' approach that has resulted in the significant efficiency gains and improved value for money to water industry customers south of the border.

How economic regulation differs in the public sector

Regulators normally rely on shareholders and capital markets generally (ie bond holders) to exert pressure on management to out-perform efficiency targets. More recently, however, the creation of not-for-dividend companies (such as Glas Cymru² and Network Rail) and the introduction of regulation to public sector companies (such as Scottish Water and Royal Mail) have led regulators to refine their approaches and seek to create structures which encourage management to perform and to reward exceptional performance. In relation to Scottish Water, these incentive structures are properly the primary responsibility of the Scottish Executive and we understand that relevant proposals are being formulated.

In general, in 'not-for-dividend' private sector companies the extra returns available from out-performing the regulatory contract may be available to customers more immediately. The company's managers have to determine how best to use any such extra return. They are likely to consider the following options:

 Improving the financial strength of the company, for example by building reserves or by undertaking

¹ A small number of customers may have some choice in their arrangements for a water and/or sewerage service.

Glas Cymru is the not-for-dividend company limited by guarantee which acquired Welsh Water in May 2001.

spending that will facilitate future improvements in efficiency. Such action would benefit customers in the medium to long term.

- Delivering price cuts for customers within a regulatory control period.
- Investing to improve the levels of service to customers.

Regulators have, in principle, concluded that incentivebased regulation can be used to regulate not-fordividend and public sector³ companies. Obviously they cannot rely on shareholder pressure to improve value for money to customers. This has required the regulators to focus on corporate governance and incentive frameworks.

Incentive-based regulation, if successfully applied, could bring significant benefits to customers in Scotland. For example, if Scottish Water matches the level of efficiency of investment and service delivery that is achieved by the companies south of the border, Scottish customers could expect sustainably lower charges than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital.

Applying the RPI-X incentive framework in Scotland

Our primary tool is the use of comparative analysis to promote continued improvements in customer service standards, environmental and public health compliance and financial performance. Our approach is similar to that employed by other regulators, including the Office of Water Services (Ofwat), which has had long experience in regulating the water and sewerage companies in England and Wales.

Our analysis of incentive-based regulation has identified three elements that are likely to be critical to the successful application of this framework in Scotland.

 There should be a tight budgetary constraint: charge cap regulation will not be effective if Scottish Water believes that there could be an advantage from spending and/or borrowing more than is absolutely necessary.

- There should be an incentive for Scottish Water to out-perform the regulatory contract: the contract must be transparent and achievable and it must be monitored rigorously. It must also be clear that management will be held to account only for those factors that it can control.
- The interests of management should be aligned with the level of performance that Scottish Water is tasked with delivering.

Our review further highlighted that incentives for improving capital efficiency may have to be somewhat different in the public sector. In the private sector, reductions in capital spend from increased efficiency will bring benefits to shareholders and result in lower prices for customers. In the public sector there are potentially different pressures. High levels of investment are typically viewed as politically desirable, particularly where there are perceived customer service and/or network performance issues. This could reduce the incentive for Scottish Water to out-perform the regulatory contract on capital expenditure.

This risk could be mitigated if any out-performance (after staff incentives) in capital expenditure is invested in additional capital projects, approved by Ministers which improve customer service, the environment and/or public health.

Importance of the tight budgetary constraint

In both the public and private sectors, economic regulators seek to establish a tight budgetary constraint on the regulated body. In other words, clear statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent. This can be achieved by fixing the maximum return available (unless targets are beaten) or by limiting the total cash funds that may be consumed.

This tight budgetary constraint should focus management attention on delivering ongoing improvements in value for money to customers. This explains why regulators publish regular assessments of the financial performance

Regulation of a public sector corporation is not unique. Postcomm fulfils a similar role to this Office in its regulation of the Royal Mail. The Civil Aviation Authority also has economic regulation responsibilities for the locally owned Manchester Airport.

of the companies or organisations they regulate. Of course, regulators will also monitor the outcomes for customers very carefully It is not in customers' interests if budgetary pressures result in corners being cut either in customer service or in the way the asset base is maintained. In this regard it is important to be clear about what regulators mean by efficiency: we recognise efficiencywhen an improved or at least equivalent level of service has been delivered to customers at the same or at a lower cost.

In a competitive market, where customers have a choice of supplier, companies face similar tight budgetary constraints in that they have to ensure that their costs are within the effective limits determined by the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

Adapting tight budgetary constraints to the public sector context

Our analysis suggested that the framework for the water industry in Scotland needed to take account of, amongst others, the following particular factors:

- The objectives of the Government as the owner: the Government is primarily interested in the efficient delivery of its objectives and the steady improvements of such standards, as well as meeting its international obligations.
- A reduced incentive to out-perform the regulatory contract because the Government is a different type of owner and may not value any increased potential to receive dividends.
- Sensitivity concerning management rewards: public sector businesses are relatively rare. It is difficult to reconcile the pressures of public sector pay policy with the need to create a real incentive for outperformance.
- Access to government funding: in the private sector, the providers of finance require a return on any capital provided. The public sector may not be as

rigorous in its allocation of capital and as a result the regulated company may not face a truly hard budgetary constraint.

This last factor is particularly essential. In the public sector it is important that the owner does not accept a lower level of performance than that set in the regulatory contract. In this regard we are encouraged by the February Ministerial Guidance on the principles of charging and setting investment objectives within a borrowing limit.

If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers, as the responsible body, to decide on an appropriate course of action. In our view their response should ensure that such failures have minimal adverse impact on customers.

It is, however, important to differentiate between cost problems which arise and are reasonably within the control of managers, and those shocks or factors that are genuinely outside the control of management. The regulatory framework needs to be able to respond in an effective and timely way to unexpected increases in costs or reduced income that are outside the control of management. This will be achieved primarily through the interim determination process.

The role of interim determinations

An interim determination is a reconsideration of a firm's price limits that is undertaken within a regulatory control period. Either the firm or the regulator may initiate an interim determination if there are material changes to the cost and revenue assumptions on which a determination has been based.

Examples of factors that we would consider to be within and outside the control of management are outlined in Table 1.

Table 1: Examples of factors that are within and outside management's control

Within management's control	Outside management's control
Obtaining planning permission	Changes in planning law
Inflation risks caused by advancing or delaying the delivery of the investment programme	Capital inflation difference on planned schedule of investment delivery
	Legal changes
	Price increases caused by regulatory settlements for electricity (to the extent not captured in inflation indices)

We consider that the materiality⁴ threshold for an interim determination that Ofwat has set for the companies in England and Wales is a useful indicator of circumstances in which either Scottish Water or the Water Industry Commission could initiate the interim determination process. We believe that (subject to scrutiny by the new Water Industry Commission), Ministers should be prepared to increase their lending to Scottish Water up to the maximum reserve of £40 million to bridge the gap between the level of funding available in the determination and the threshold for an interim determination.

In the event that an interim determination is not triggered, any variances in costs that are outside the control of management would be taken into account at the next Strategic Review of Charges.

How we would propose to deal with out-performance

The founders of Glas Cymru made a commitment to use the proceeds of out-performance to create a financial buffer that would protect customers from the potential adverse impact of a financial or operational shock. They also committed themselves to provide rebates to customers within the regulatory control period as soon as they had established an appropriate financial buffer. Glas Cymru's customers have now enjoyed two such rebates. We believe that from a customer perspective there is much to commend this approach.

Scottish Water has slightly greater scope in percentage terms (much greater in absolute terms) to out-perform

this draft determination than the companies south of the border have to out-perform Ofwat's recent price determination. This lower level of costs would form the baseline for the next determination.

Clearly, it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the required level of performance at this lower cost. The detail of any incentives for Scottish Water's managers would be a matter for the Executive and Scottish Water to settle in the particular context of a publicly owned business. Our view is that there should be a direct and transparent link, published in advance, between the bonuses that are available to senior management and out-performance of the determination of charges.

The investment programme

Scottish Water's second draft business plan (April 2005)⁵

Scottish Water's second draft business plan claimed that even the 'essential' objectives set out in the Ministerial Guidance would lead to a significant increase in charges. Scottish Water suggested instead:

- a re-phasing of the investment objectives, with less being undertaken in 2006-10 and more in 2010-14;
- increasing the borrowing limits permitted to Scottish Water; or
- · reducing the scope of the objectives.

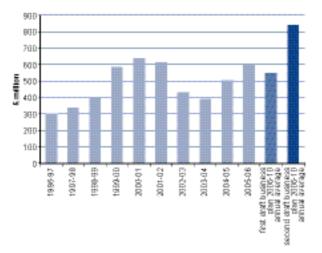
Scottish Water stated that it would need to invest £3.37 billion to meet the Ministers' essential and desirable objectives over the same period. Some £2.92 billion would be required to meet the Ministers' essential objectives.

Figure 1 compares the total investment per year suggested by the first and second draft business plans with historic and actual spending.

Effect must exceed 10% of allowed revenue when calculated as the net present value over 10 years for operating costs, 15 years for revenue or capital expenditure.

⁵ Scottish Water's second half business plan is available on our web site: www.watercommissioner.co.uk.

Figure 1: Total investment per year – comparison of actual level of investment with first and second draft business plans



Our review of the proposed investment programme

Scottish Water's investment plan has been scrutinised in detail by the Reporter, the quality regulators (the Drinking Water Quality Regulator, DWQR, and the Scottish Environment Protection Agency, SEPA) and this Office. The Reporter raised a number of concerns about the scope and composition of the proposed investment programme. We therefore asked two firms of engineering consultants and Ofwat to help us carry out a more detailed review of the capital programme than we had originally planned.

In our assessment of Scottish Water's investment programme we distinguish between capital maintenance (required to maintain the current level of service) and capital enhancement (required to provide an improved level of outputs). We also distinguish, in relation to each, between cost reductions that arise from reducing the scope of the capital programme (delivering the same level of outputs but with projects that are reduced in scale and/or number), and from procurement efficiency (procuring the same capital project at lower cost).

Figure 2 summarises the process by which we have determined capital investment targets for Scottish Water at this Review.

Figure 2: Framework for setting capital investment targets

Ministerial Guidance on the size of the overall investment programme and the outputs required to be delivered Establish Scottish Water Investment Plan submission with initial investment programme costs, project by project, and detailed information on outputs Establish impact of Quality and Standards II overhang and build into baseline investment programme Reporter & regulator challenge: audit of scope of project SEPA and DWQR scrutiny: ensure that required outputs are Review programme Further challenge and scrutiny by two consultant engineering and firms and by Ofwat establish a baseline Capital maintenance Capital enhancement baseline investment baseline investment programme programme Ofwat cost base Ofwat capital maintenance Assess econometrics and cost base relative plus allowances for efficiency additional capital maintenance to ensure continuing serviceability Ofwat targets for capital Ofwat targets for capital maintenance and scope for enhancement and scope for out-performance by out-performance by companies companies Assess scope to improve Assess degree to which Assess degree to which scope for improvement is scope for improvement is programme programme Determine the required level of capital expenditure and the Target expenditure and maximum 'desirable' outputs that can be delivered in accordance with Ministerial Guidance and within an overall level of investment spend that is consistent with efficient delivery outputs

The investment programme that we have included in the draft determination

We drew the following conclusions from our analysis of the proposed capital programme:

- Scottish Water's knowledge of the condition and performance of its assets is poor and, as such, it is not possible to apply a sound, risk-based approach to capital maintenance planning.
- Scottish Water is not adopting best practice under the principles of the capital maintenance planning common framework (CMPCF).

 Synergies between the capital maintenance and quality programmes and between the capital maintenance programme and operating expenditure are not fully understood.

Capital maintenance: comparison using Ofwat models

We set out the estimated required level of annual capital maintenance for Scottish Water (as calculated by the Ofwat models) in Table 2. (Totals may not add due to rounding.)

Table 2: Scottish Water's assessed capital maintenance requirements using Ofwat's models

	Water service	Sewerage service	Combined total	Four year total
Infrastructure assets	£29.3m	£24.1m	£53.4m	£213.6m
Above-ground assets	£50.0m	£43.0m	£93.0m	£372.0m
Service total	£79.3m	£67.1m	£146.4m	£585.5m

These results reflect the average level of efficiency in England and Wales in 2003-04. The best performing company incurred capital maintenance costs that were around 8% lower than those predicted by the econometric models.

We have also allowed seven exceptional items.

Exceptional item 1 Contingency to address public health concerns – up to £20 million.

Exceptional item 2 Contingency to address environmental concerns – up to £20 million.

Exceptional item 3 To achieve CMPCF 'best practice' – up to £15 million.

Exceptional item 4 To achieve progress towards economic levels of leakage – up to £40 million.

Exceptional item 5 Transfer from quality investment programme, to meet iron and manganese drivers – £17.5 million (£22 million transferred, less efficiencies).

Exceptional item 6 Metering – up to £12 million.

Exceptional item 7 Quality programme – up to £20 million.

Our view is that Scottish Water should not commit the resources made available to reduce leakage until it has agreed its economic level of leakage with the new Water Industry Commission. It should also agree with SEPA and DWQR the priority areas for leakage reduction consistent with its economic level of leakage.

In this draft determination we believe that the maximum level of capital maintenance should be £780 million. The lower end of our proposed range for the allowed for level of capital maintenance is £647 million. Even this lower allowed for level of capital maintenance is higher than a company south of the border would have been allowed by Ofwat.

Capital enhancement investment

Our review of the capital programme identified a number of areas where Scottish Water had taken a particularly risk-averse approach in defining the work that was required. There appears to be a lack of detailed understanding of assets and their performance. It is likely that this, combined with the risk-averse approach of Scottish Water, has been a major factor in limiting opportunities for development in some areas. We have identified ranges for the required level of spending in each area. A summary of the changes to the baseline investment programme resulting from our review process is shown in Table 3. Notwithstanding our concerns about Scottish Water's approach, we have made substantial resources available to facilitate development in potentially constrained areas.

Table 3: Summary of the proposed changes to the baseline enhancement investment programme (pre-efficiency)

Investment category	Project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost
Drinking water quality	1063.7m	752.0m	569.6m
Environmental	845.2m	386.8m	260.4m
Customer service + initial retail investment	84.1m	98.4m	98.4m
Growth (Contribution from customer base)	291.4m	214.9m	184.7m
Total 2006-10	2,284.4m	1,452.2m	1,113.1m

We believe that spending on the release of development constraints needs to be carefully monitored. It will be important to introduce a system of infrastructure charges that will allow investment to be targeted at constrained areas where development is about to start. The release of this investment should be agreed in advance with the Scottish Executive's capital monitoring group.

The potential for procurement efficiency in both capital maintenance and capital enhancement

It is an important principle that we assess the scope for efficiency for both capital maintenance and capital enhancement at a programme level. We do not seek to review the relative efficiency of individual projects.

In determining the potential for efficiency in the delivery of capital maintenance, we have taken account of the approach that is adopted by Ofwat for the companies in England and Wales. We have adjusted this approach to take account of the situation in Scotland.

We used Ofwat's cost base approach to benchmark Scottish Water's efficiency in delivering capital enhancement projects. We took account of special factors relating to the industry in Scotland. Our work in this area was reviewed by Ofwat to ensure that it was properly consistent with the approach south of the border. The capital efficiency factors that resulted from this analysis are shown in Table 4⁶.

^{6 &#}x27;Continuing improvement' refers to Ofwat's expectations in price limits of the level of improvement achievable by leading companies. It is equal to half the total scope for improvement by leading companies estimated by Ofwat in its 2004 price review.

Table 4: Capital efficiency factors applied to the quality, growth and customer service investment for the highest estimated cost investment programme

	Cost base efficiency gap	Reduction required to close 75% of gap	Additional reduction required to match 'continuing improvement'9 by water companies	Total reduction required
Water				
Infrastructure	23.5%	17.6%	3.7%	20.7%
Non-infrastructure	25.7%	19.3%	3.7%	22.3%
Weighted average	25.6%	19.2%	3.7%	22.2%
Sewerage				
Infrastructure	17.2%	12.9%	4.4%	16.7%
Non-infrastructure	29.8%	22.4%	4.4%	25.8%
Weighted average	22.4%	16.8%	4.4%	20.5%
Combined		•		
Infrastructure	17.9%	13.4%	4.3%	17.2%
Non-infrastructure	26.7%	20.0%	3.9%	23.1%
Weighted average	24.2%	18.2%	4.0%	21.4%

In line with an approach that has previously been adopted by the Competition Commission⁷, we have phased the efficiency challenge for Scottish Water over the first three years of the regulatory control period. As such, the scope for efficiency is likely to be in a range from 15.4% to 20.8%, averaged over the four-year capital programme.

Allowed level of capital expenditure

We have applied the capital efficiency factors in Table 4 to the investment programme. The resulting post-efficiency investment profile, including the capital maintenance element, is shown in Table 5.

This investment also takes account of the likely overhang of investment from the current regulatory control period and the unsubstantiated claim for efficiency that was made by the former East of Scotland Water Authority in 2001.

⁷ See the Competition Commission's Reports in 2000 on references under Sections 12 and 14 of the Water Industry Act 1991 in relation to Mid Kent Water and Sutton & East Surrey Water Services.

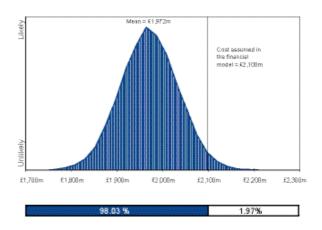
Table 5: Allowed for level of capital expenditure 2006-10 (post-efficiency)

	2006-07	2007-08	2008-09	2009-10	Total
Draft determination			•		•
Capital maintenance, current lowest realistic	£90.9m	£171.1m	£187.3m	£197.6m	£646.9m
Capital maintenance, highest estimated	£109.6m	£206.3m	£225.9m	£238.3m	£780.0m
Water quality, current lowest realistic	£63.4m	£119.3m	£130.6m	£137.8m	£451.1 m
Water quality, highest estimated	£89.4m	£168.3m	£184.2m	£194.3m	£636.2 m
Waste water quality, current lowest realistic	£29.0m	£54.5m	£59.7m	£63.0m	£206.2 m
Waste water quality, highest estimated	£46.0m	£86.5m	£94.8m	£99.9m	£327.2 m
Customer service, current lowest realistic	£9.3m	£17.5m	£19.1m	£20.2m	£66.1 m
Customer service, highest estimated	£9.9m	£18.7m	£20.4m	£21.6m	£70.6 m
Growth, current lowest realistic	£21.9m	£41.2m	£45.2m	£47.6m	£156.0 m
Growth, highest estimated	£26.8m	£50.5m	£55.3m	£58.3m	£190.8 m
Introduction to competition, lowest estimated	£8.5m	£2.4m	£0.5m	£0.5m	£11.9 m
Introduction to competition, highest estimated	£9.1m	£2.6m	£0.5m	£0.5m	£12.7 m
Total Quality and Standards III, current lowest realistic	£222.9m	£406.1m	£442.4m	£466.7m	£1,538.2 m
Total Quality and Standards III, highest estimated	£290.8m	£532.8m	£581.1m	£612.9m	£2,017.5m
Overhang from Quality and Standards II	£224.6m	£28.4m	£0.0m	£0.0m	£253.0 m
East of Scotland Water Authority unsubstantiated efficiency adjustment	-£14.4m	-£13.9m	-£13.5m	-£13.1m	-£54.9 m
Grand total, current lowest realistic	£433.2m	£420.6m	£428.9m	£453.5m	£1,736.2 m
Grand total, highest estimated	£501.0m	£547.3m	£567.5m	£599.8m	£2,215.6 m

Assessment of the level of investment included in the financial model

In setting a level of capital investment for the financial model, we have taken account of the scope for efficiency and the range of investment that we consider could be required. The result of this analysis was a probability distribution for the cost of the entire capital programme. Figure 3 shows the results of our risk analysis.

Figure 3: Results of risk analysis on capital investment costs 2006-10



This analysis suggested that, given the ranges we assumed⁸, there is less than a 2% chance that the required capital programme will exceed our estimate of £2,100 million (2003-04 prices).

⁸ We assumed there was a 5% risk that our lower limit was too high and that our upper limit was too low.

Comparative level of investment

The total investment to be delivered in Scotland is very substantial when compared with the likely level of investment south of the border in the same period. This is illustrated in Table 6. The programme is also very large relative to Scottish Water's total number of connected properties.

Table 6: Total investment (absolute and by connected property) in 2005-10

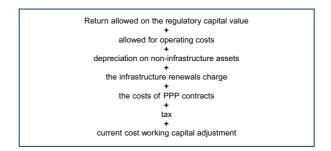
	Total investment (2005-10) ⁹	Rank	Total investment per connected property (2005-10)	Rank
Anglian	£1,545m	6	£625	9
Dwr Cymru	£1,218m	8	£931	3
Northumbrian	£891m	9	£485	11
Severn Trent	£2,343m	4	£632	8
South West	£811m	10	£1,095	2
Southern	£1,663m	5	£919	4
Thames	£3,289m	1	£614	10
United Utilities	£2,635m	3	£879	5
Wessex	£804m	11	£732	7
Yorkshire	£1,526m	7	£740	6
Scottish Water	£2,683m	2	£1,138	1

How we have set charges

Moving towards the RCV method of price setting

Under the Regulatory Capital Value (RCV) method of charge setting, the revenue that Scottish Water should be allowed is calculated as set out in Figure 4.

Figure 4: Calculation of the allowed for level of revenue



Scottish Water will receive an appropriate rate of return on its RCV. The value of the RCV will change over time to reflect the ageing (use) of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets.

The level of the RCV does not, in itself, impact on the charges that customers pay. It is the cash return allowed on the RCV that determines the level of charges. The second element of the calculation of the allowed return on the RCV is the rate of return.

We multiply the rate of return by the RCV (adjusted in future years to reflect investment and depreciation) to establish the cash return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

Moving towards the RCV approach to charge setting has two key benefits. First, it should provide a basis for incentives for management that will be transparent, published in advance and objectively measurable. Secondly, it allows us to compare financial ratios on a like-for-like basis with other regulated utilities, so providing a better indication of financial sustainability.

Our move towards the regulatory capital value (RCV) method of charge setting at this draft determination will have no material impact on the charges faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure.

⁹ Figures in 2003-04 prices.

Ratios

The Ministerial Guidance required us to ensure that the charges we set for this regulatory control period would not disadvantage future customers. Ministers also wanted Scottish Water's financial strength to be improved, if possible, over the 2006-10 regulatory control period. To assess the financial sustainability of the water industry in Scotland, we have adopted the same financial ratios that Ofwat used to assess the water industry south of the border. The financial ratios that we have used are summarised in Table 7.

Table 7: Financial ratios used in this draft determination

Financial ratio	Targeted value
Cash interest cover	Around 3 times
Adjusted cash interest cover	Around 1.6 times
Funds from operations: debt	Greater than 13%
Retained cashflow: debt	Greater than 7%
Gearing	Less than 65%

We have set the RCV for the start of the regulatory control period such that, if Scottish Water were to comply with the terms of this draft determination, it would comply with all of the cash-based financial ratios at the end of the 2006-10 regulatory control period. Scottish Water's financial strength, as measured by the debt to RCV (Gearing) ratio, also improves over the regulatory control period.

Allowed rate of return

We have decided to apply a modified version of the weighted average cost of capital (WACC) approach that is used by regulators of private sector companies. We have combined an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

The future real rate of interest on debt for Scottish Water was estimated by looking at an average of current borrowing rates faced by Scottish Water. We concluded that a nominal pre-tax cost of debt of 4.6% was reasonable. We have also, however, made an allowance for the full cost of embedded debt.

We have set the pre-tax allowed rate of return on the unleveraged portion of the RCV at the post-tax allowed rate of return for debt. This allowed rate of return is therefore 3.22%. There is consequently no incentive for Scottish Water to seek to change its current ratio of debt to its RCV. It is important to note that, since we have fixed the initial RCV with reference to financial ratios in 2009-10, a higher rate of return in this regulatory control period would only have the effect of lowering the value of the initial RCV.

Calculating the RCV

Our calculation of the initial RCV is shown in Table 8. We have adjusted the average RCV in 2006-07. This reflects investment during 2006-07 and the reduction in the RCV that we included to compensate customers for the overhang from Quality and Standards II¹⁰.

Table 8: Calculation of the initial RCV

Nominal prices	2006-07	2007-08	2008-09	2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Inflation adjustment	£70.4 m	£77.0m	£84.3m	£92.1m
New investment	£534.3m	£593.0m	£633.3m	£689.5m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8 m	£4,031.0m	£4,410.2m	£4,821.8m

We discuss the extent of the investment overhang from Quality and Standards II in Chapter 6 of Volume 5. We also discuss how we have taken account of the unsubstantiated efficiencies claimed by East of Scotland Water Authority.

The allowed for level of operating costs

The maximum total operating costs that we have allowed for in the draft determination includes both 'base' operating costs (those costs required to deliver the current level of service) and 'new' operating costs (those costs that reflect improvements in the level of service beyond that assumed in our benchmarking). We believe that the allowed for level is sufficient for Scottish Water to meet all of the 'essential' and 'desirable' objectives of the Scottish Ministers. Figure 5 summarises how we have calculated the allowed for level of operating costs.

Figure 5: The calculation of the allowed for level of operating costs

Total allowed for operating expenditure

Baseline operating expenditure

t

Assessed changes in baseline operating expenditure

Efficiencies in baseline operating expenditure

New operating expenditure

Efficiencies on new operating expenditure

Public Private Partnership (PPP) operating expenditure

The impact of annual inflation on all of these components

The allowed for operating costs have been reduced to reflect the scope for improvement in efficiency. It is important to emphasise that by 'efficiency' we mean delivering the same level of service for less money. Efficiencies, by definition, cannot result in lower levels of service.

Establishing a baseline for operating costs

For each regulatory control period we need to identify one base year. We have decided to use 2003-04 as the base year for this draft determination.

To establish the level of baseline operating costs for 2003-04 we:

- take reported core costs;
- adjust for atypical costs (or savings);

- · remove exceptional costs; and
- ensure that cost allocation practices are consistent with those in England and Wales.

Our baseline for operating costs also takes account of potential changes in costs during the regulatory control period. Examples of such changes include:

- non-household rates;
- pension costs; and
- · energy costs.

We have analysed these factors carefully to ensure that Scottish Water has sufficient resources to deliver an improving level of service (consistent with the OPA milestones that we discuss below).

Table 9 summarises the baseline that we have established.

Table 9: Summary of the operating cost baseline 2006-10 (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Base operating costs (water)	£166.7m	£166.7m	£166.7m	£166.7m
Increase in operating costs – water	£7.5m	£8.9m	£10.4m	£10.4m
Base operating costs – waste water	£129.7m	£129.7m	£129.7m	£129.7m
Increase in operating costs – waste water	£2.8m	£2.8m	£2.8m	£2.8m
Total base operating costs	£306.7m	£308.1m	£309.6m	£309.6m

New operating costs

During the 2006-10 regulatory control period, Scottish Water will incur new operating expenditure to deliver improvements in:

- environmental compliance;
- drinking water quality;
- · levels of service to customers; and
- the supply/demand balance.

¹¹ See Chapter 6 of Volume 6 for more detail on the calculation of baseline operating costs and any necessary adjustments.

¹² See Chapters 8, 9 and 10 of Volume 6 for more detail on the calculation of the efficiency gap.

¹³ See Chapter 7 of Volume 6 for more detail on new operating costs.

In its second draft business plan, Scottish Water submitted a total claim for new operating expenditure of £37 million by 2009-10, before efficiencies. This is set out in Table 10.

Table 10: Scottish Water's claimed new operating expenditure (pre-efficiency) 2006-10

	2006-07	2007-08	2008-09	2009-10
Water	£0.9m	£4.2m	£6.3m	£28.1m
Waste water	£1.9m	£3.3m	£5.1m	£9.1m
Total	£2.8m	£7.5m	£11.4m	£37.2m

We have assessed Scottish Water's claim in detail. Our analysis has identified several reasons why less new operating expenditure should be allowed for. One of the most significant of these is that the companies in England and Wales in 2003-04 were already delivering enhanced water quality standards. This cost is, therefore already included in our benchmarking of relative efficiency. Our conclusions are detailed in Table 11.

Table 11: Allowed for level of new operating expenditure (pre-efficiency) 2006-10¹⁴

	2006-07	2007-08	2008-09	2009-10
Water	£0.2m	£0.6m	£1.4m	£6.9m
Waste water	£0.9m	£2.3m	£3.3m	£5.4m
Total	£1.1m	£3.0m	£4.7m	£12.2m

Establishing the operating cost efficiency gap

We used three separate techniques to compare Scottish Water's performance against that of the companies in England and Wales:

- · the econometric models developed by Ofwat;
- a modified version of the Ofwat models (reworked to include information from Scottish Water); and
- an alternative model developed by this Office.

The benchmark company for the water service in England and Wales was Wessex Water. For the

sewe rage service, the benchmark company was Yorkshire Water. We have made the same adjustments to the results of our comparisons as were made by Ofwat¹⁵.

Table 12 shows the results of our analysis of efficiency.

Table 12: Scottish Water's efficiency gaps after adjustments of the residuals

Efficiency gap	Ofwat models	Modified Ofwat models	WICS alternative model
Average – water service	10%	10%	13%
Wessex – water service	28%	27%	39%
Yorkshire – water service	23%	23%	24%
Average – sewerage service	19%	18%	9%
Wessex – sewerage service	33%	32%	28%
Yorkshire – sewerage service	29%	28%	29%
Average – combined	14%	13%	17%
Wessex – combined	30%	29%	39%
Yorkshire – combined	26%	25%	31%

There is little difference between the various approaches we used when we look at relative performance for both water and sewerage combined. There is around a 30% operating cost gap (before adjustments) between Scottish Water and the frontier company.

Adjustments to our models for special factors

We take into account special factors in our assessment of Scottish Water's relative efficiency. Special factors reflect differences in the operating environment (that are outside the control of managers) and which are not included in our modelling. We asked Scottish Water to draw factors that influenced its costs (both positively and negatively) to our attention. In assessing these special factors for Scottish Water, we used the same approach as Ofwat uses for the companies in England and Wales.

Scottish Water's assessment (in 2003-04 prices) of the impact of special factors is outlined in Table 13. We also include the results of our analysis of these claims. Our assessment of Scottish Water's claim for special factors took account of the fact that this claim would have made it the frontier efficient company, by some distance, in the

Totals may not add exactly due to rounding

¹⁵ Ofwat makes adjustments to the residuals (the measure of inefficiency) of 10% for the water service and 20% for the sewerage service.

supply of water by 2005-06. This would not have been consistent with comments made by Scottish Water in its business plan about asset knowledge and the integrity of its customer information.

Table 13: The annual financial impact of special factors (2003-04 prices)¹⁶

Special factor	April 2005 submission	Allowance in draft determination	
OPERATING EXPENDITURE			
Inherited asset base			
Leakage	£9.8m	£0m	
Central regulatory laboratory	£0.7m	£0.7m	
Geography and environment			
Travel costs	£11.4m	£6.5m	
Service reservoirs and water towers	£2.1m	£0m	
Electricity	£4.7m	£2.0m	
Supply of materials to rural locations	£0.5m	£0m	
Bad debt	£7.3m	£2.6m	
Legal			
Sewer laterals	£11.7m	£3.9m	
Waterworks sludge disposal	£2.3m	£0.9m	
Political queries	£0.3m	£0m	
Cryptosporidium	£2.0m	£0m	
Other			
Public septic tanks ¹⁷		£0.8m	
Operating expenditure total	£52.7m	£17.4m	
CAPITAL MAINTENANCE EXPENDIT	URE		
Water resources and treatment	£17.4m	£0m	
Service reservoirs	£1.0m	£0m	
Capital maintenance total	£18.4m	£0m	
TOTAL	£71.1m	£17.4m	

Adjustments for differences in the scope of activities

In England and Wales, the companies provide a broadly equivalent level of service to their customers. The scope of activity each company provides is also comparable. In general, therefore, Ofwat does not have to adjust the result of its models to reflect any differences in the level of service or the scope of activities between companies.

In Scotland, by contrast, the scope of activities and the levels of service provided to customers are different from those provided in England and Wales. Such differences matter to customers, impacting not only on the service they receive, but also on the prices they pay.

The results of our analysis are outlined in Tables 14 and 15.

Table 14: Summary of adjustments to the allowed for level of operating expenditure for differences in the scope of activities for the water service¹⁸

Water activity	Effect on Scottish Water's allowed operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Leakage	Decrease	£6.8m
Nitrate removal	Decrease	£1.6m
Legal duty to promote efficient water use	None	Immaterial
Reporter costs	Decrease	£0.15m
Total	Decrease	£10.8m

Table 15: Summary of adjustments to the allowed for level of operating expenditure for differences in the scope of activities for the waste water service¹⁹

Waste water activity	Effect on Scottish Water's allowed for operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Reporter costs	Decrease	£0.15m
Total	Decrease	£2.3m

The adjustments represent approximately 12% of Yorkshire Water's modelled water operating cost²⁰ and 3% for modelled sewerage operating costs. This has the effect on the efficiency gap set out in Table 16. In our base year, 2003-04, the adjustments for special factors and for the scope of activities led to an efficiency gap of 32% for the water service and 24% for the waste water service.

¹⁶ Totals may not add exactly due to rounding.

We have allowed Scottish Water a special factor of £0.8 million for the efficient costs of operating public septic tanks. There are more than 1,200 of these in Scotland, but very few exist in England and Wales. Scottish Water did not claim for any such special factor

Totals may not add exactly due to rounding.

¹⁹ Totals may not add exactly due to rounding.

We have also examined the impact on Wessex Water, the other leading comparator company. The impact on both Wessex Water and Yorkshire Water is very similar.

Table 16: Modelled answers (adjusted for special factors and scope of activities)²¹

	Water	Waste water
Initial gap	27%	28%
Gap after adjustment for special factors	25%	23%
Gap after adjustment for scope	32%	24%

Levels of service

We had wanted to adjust our assessment of efficiency to take account of differences in the levels of service provided either side of the border. Unfortunately, Scottish Water did not provide the information in its second business plan that we requested. We have therefore set milestones to monitor improvements in the level of service provided by Scottish Water each year. These milestones will help us to gauge whether Scottish Water is making good progress in closing the level of service gap. They will also allow us to verify that efficiency targets are not being met at the expense of customer service.

Table 17 shows the milestones that we expect Scottish Water to achieve²³.

Table 17: Milestones for the overall performance assessment of customer service

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPA	159	159	159	195	232	268	305

Scope for reduction in operating costs

We have accepted Scottish Water's view on its likely improvement over the remainder of this regulatory control period. We decided to adopt the approach that is used by Ofwat, adjusted to take account of the rapid improvement by Scottish Water that is likely in the last two years of the current regulatory control period. This assumption affects the level of operating costs that we have allowed in the earlier years of the regulatory control period. It does not affect the overall closure of the

operating cost efficiency gap achieved by 2009-10. Scottish Water is required to close 60% of the gap to the frontier company for water and sewerage and to match the overall scope for improvement in the industry identified by Ofwat.

Allowed for level of operating expenditure

As we noted earlier, the level of operating cost that we have allowed for provides slightly greater scope for Scottish Water to out-perform than is available to companies south of the border. We have set the profile for Scottish Water's operating expenditure during the 2006-10 regulatory control period that is outlined in Table 18.

Table 18: Summary of allowed for total operating costs for 2006-10²⁴

		2006-07	2007-08	2008-09	2009-10
	Baseline operating expenditure	£296.5m	£296.5m	£296.5m	£296.5m
Less	Efficiencies in the baseline	£53.0m	£53.9m	£54.7m	£55.6m
Plus	Assessed changes to baseline operating expenditure	£10.2m	£11.6m	£13.1m	£13.1m
Less	Efficiencies in assessed changes to the baseline	£0.9m	£1.4m	£2.1m	£2.6m
Plus	New operating expenditure	£1.1m	£3.0m	£4.7m	£12.2m
Less	Efficiencies in new operating expenditure	£0.1m	£0.4m	£0.9m	£2.9m
Equals	Sub total operating expenditure	£253.9m	£255.4m	£256.6m	£260.8m
Plus	PPP operating expenditure	£116.0m	£116.0m	£117.9m	£121.3m
Plus	Inflation ²⁵ from 2003-04	£22.6m	£30.6m	£39.00m	£48.2m
Equals	Total allowed for operating expenditure	£392.5m	£402.0m	£413.5m	£430.3m

Required revenue 2006-10

The revenue that we propose to allow Scottish Water in each year of the regulatory control period is set out in Table 19. In line with the Ministerial Guidance, we have smoothed the change in revenue. We have estimated real increases using an assumed 2.5% annual increase in the retail price index (RPI).

²¹ The gap for the water service is with respect to Wessex Water and waste water service in respect of Yorkshire Water

We have set the levels of service milestones in an adapted overall performance assessment. This is described in detail in Chapter 14 of Volume 6.

²³ Numbers may not add exactly due to rounding.

We have assumed annual inflation of 2% (CPI) between 2005-06 and 2009-10.

Table 19: Calculation of the revenue caps 2006-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Total revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Year on year increase (nominal)	n/a	1.82%	2.33%	0.36%	0.90%
Year on year increase (real)	n/a	-0.68%	-0.17%	-2.14%	-1.60%

In Table 20 we set out the value of each targeted ratio for each year of this regulatory control period.

Table 20: Financial performance 2006-10

Financial ratio	Targeted value	2006-07	2007-08	2008-09	2009-10
Cash interest cover	Around 3 times	3.7	3.9	3.6	3.5
Adjusted cash interest cover	Around 1.6 times	2.5	2.6	2.2	2.0
Funds from operations: debt	Greater than 13%	15.9%	16.3%	14.1%	13.0%
Retained cashflow: debt	Greater than 7%	15.9%	16.3%	14.1%	13.0%
Gearing	Less than 65%	67.0%	64.6%	63.9%	63.8%

Public expenditure

The revenue caps set out above require Scottish Water to take on considerable new debt during the next four years. This net new debt counts as public expenditure. In the Minister's February statement, Scottish Water was allowed £182 million of public expenditure a year. The Minister also allowed Scottish Water to carry forward any unused public expenditure from the 2002-06 regulatory control period.

The use of public expenditure is summarised in Table 21.

Table 21: Public expenditure 2006-10

		2006-07	2007-08	2008-09	2009-10
2002-06 carry over	£256.0m				
Available public expenditure at start of year (including carry-over)		£438.0m	£495.0m	£529.4m	£493.2m
Public expenditure used		£124.6m	£148.0m	£218.2m	£270.6m
Unused public expenditure at year end		£313.4m	£347.4m	£311.2m	£222.6m

Charge caps

The charge limits for non-household customers will limit the increases in charges that the new retail subsidiary of Scottish Water can levy on its customers²⁵. Charges are set relative to RPI. The difference between the charge cap and RPI is termed the 'K' factor.

We intend to make it a licence condition of the new retail subsidiary that it agrees to be bound by these charge caps. The non-household charge caps will also apply to Scottish Water in its role as the 'supplier of last resort'. Charge caps apply to each of the tariff baskets. These baskets group together all of the tariffs that apply to a particular service.

The K factors for each tariff basket, against which we will monitor Scottish Water, are shown in Table 22.

Table 22: The K factor for each tariff basket

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	-0.5%	-0.5%	-2.5%	-2.5%
Household unmeasured waste water	-0.5%	-0.5%	-2.5%	-2.5%
Non-household unmeasured water	-2.5%	-2.5%	-4.6%	-2.5%
Non-household unmeasured waste water	-2.5%	-2.5%	-4.6%	-2.5%
Measured water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Measured wastewater (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Surface water drainage (excluding unmeasured domestic)	-2.5%	-2.5%	-4.6%	-2.5%
Trade effluent	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered waste water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Overall weighted average price increase	-1.2%	-1.2%	-3.3%	-2.5%

The charge limits for non-household customers will limit the increases in charges that the new retail subsidiary of Scottish Water can levy on its customers²⁵.

Charge limits for Scottish Water's core wholesale business

We have also set limits on the increases in charges that Scottish Water can charge its own and future retailers of

²⁵ The Water Services etc. (Scotland) Act 2005 establishes a framework for retail competition in water and sewerage services in Scotland. This will require the non-household retail activities to be separated from the core wholesale business.

water and waste water services to non-household customers. There is no precedent in the UK water and sewerage industry for the setting of wholesale tariffs. We therefore believe that Scottish Water should have the opportunity to decide how it wants to set its wholesale tariffs. We will therefore ask Scottish Water to identify wholesale tariffs as part of the scheme of charges process for 2006-07. These non-household wholesale charges should be consistent with the implied wholesale revenue cap for 2005-06.

We consider that as the market develops, Scottish Water wholesale may wish to rebalance tariffs to better reflect the underlying costs. We have therefore set one K factor for the entire non-household wholesale business.

The revenue cap, expected growth in the non-household customer base and the corresponding K factor are set out in Table 23.

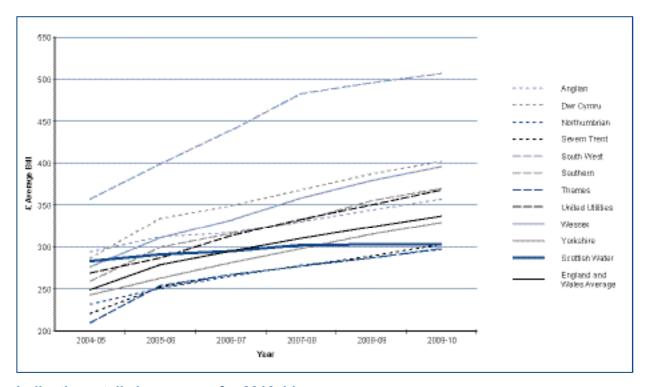
Table 23: Non-household wholesale charge limits

	2006-07	2007-08	2008-09	2009-10
Previous year revenue	£290.3m	£294.0m	£294.6m	£290.6m
Percentage change due to customer base changes	1.3%	1.0%	1.2%	0.7%
Revenue base for year	£294.0m	£297.0m	£298.0m	£292.8m
Allowed revenue	£294.0m	£294.6m	£290.6m	£293.2m
(Allowed revenue / Revenue base) minus 1	0.0%	-0.8%	-2.5%	0.1%
The K factor	-2.5%	-3.3%	-5.0%	-2.4%

Impact on customers' bills

We have compared the projected average household charge for 2006-10 for each of the water and sewerage companies in England and Wales with Scottish Water's expected average household bill. This comparison is set out in Figure 6. It shows that average household bills in Scotland will be amongst the lowest in the UK by 2009-10.

Figure 6: Comparison of household bills in Scotland with those in England and Wales 2006-10



Indicative retail charge caps for 2010-14

We have set indicative retail charge caps for the period 2010-14. These charge caps are broadly in line with RPI. The indicative charge caps are set out in Table 24.

Table 24: Indicative retail charge caps for 2010-14

Year	2010-11	2011-12	2012-13	2013-14
K Factor ²⁶	0.0%	0.0%	0.0%	0.1%

These charge caps assume the following:

- Scottish Water achieves, but does not beat, its targets for the 2006-10 regulatory control period;
- an investment programme during the 2010-14 regulatory control period of £1,800 million (in 2003-04 prices);
- capital inflation of 3%;
- that there is no change in the key financial ratios; and

public expenditure of £182 million a year is available.

The actual charge caps for 2010-14 will depend on Scottish Water's performance in the 2006-10 regulatory control period and on decisions of the Scottish Ministers with regard to their investment objectives and the level of public expenditure that they are prepared to make available.

Summary

This draft determination offers the prospect of falling charges in real terms for almost all customers. All household customers (with the exception of second home owners and some higher banded households who received transitional relief) will see their charges fall by more than 4% in real terms. Household bills in Scotland will, on average, be among the lowest in the UK. In reducing charges in real terms, we have not compromised the prospects for future charges.

It is also important to note that this draft determination funds an investment programme of £2,100 million in

²⁶ Adjustment in tariff basket income relative to the rate of retail price inflation

2003-04 prices. This is the largest investment programme in Great Britain on a per connected property basis and the second largest programme in absolute terms. Only Thames Water, which has approximately twice as many customers as Scottish Water, has a larger investment programme.

Customers in Scotland pay lower bills than would otherwise be necessary because Scottish Water has access to a lower public sector cost of capital. Bills could be more than 10% higher if this public sector debt were not available. Customers are also beginning to benefit from the improvement in efficiency that Scottish Water has achieved in its first three years of operation. Over the next few years, if Scottish Water continues to improve its efficiency, customers in Scotland can continue to look forward to bills that are among the lowest in the UK.

Chapter 1: Introduction

Introduction

In May 2004, we were asked to begin work on the Strategic Review of Charges 2006-10 by Ross Finnie MSP, the Minister for Environment and Rural Affairs.

As a result of the Water Services etc. (Scotland) Act 2005, the new Water Industry Commission will be required to determine the level of charges that Scottish Water should be allowed to levy on its customers.

Stakeholders are encouraged to comment on this draft determination, and to make any representations that they consider appropriate, until 23 September 2005. It will be for the new Water Industry Commission to consider these representations and to prepare a final determination for publication in November 2005.

Representations should be sent to:

Katherine Russell
Director of Customer Service and Corporate Affairs
The Water Industry Commission for Scotland
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

Telephone: 01786 430200 Fax: 01786 462018

Email: Draftdetermination@watercommissioner.co.uk

Printed copies of the draft determination are available from the address above. Electronic versions are also available on CD, and on our website at www.watercommissioner.co.uk. Our financial and tariff basket models are also available on our website.

Most stakeholderswill find all of the information they need in this volume. Volumes 2 to 7 set out our detailed analysis and are intended as a complete record of our work.

This volume contains 7 chapters. Chapters 2 to 7 of this volume are substantially the same as the executive summaries in Volumes 2 to 7.

- Chapter 1 is this introduction.
- Chapter 2 outlines the background to this Review and the issues that we have considered.
- Chapter 3 provides an overview of our approach to this draft determination.
- Chapter 4 summarises the legislative framework that underpins the Strategic Review process and how this has impacted on our approach.
- Chapter 5 sets out the capital programme that is required to meet the Ministers' objectives for the water industry in Scotland. It also explains how this will be financed.
- Chapter 6 summarises how we have set the total level of operating costs for Scottish Water. It also explains the milestones for improvement in customer service that we have set.
- Chapter 7 outlines the charge limits that we propose to apply during the 2006-10 regulatory control period.

Introduction

This chapter outlines some important background to the draft determination. It also raises some of the critical issues that we consider need to be addressed.

The current Strategic Review of Charges will set charge limits for the 2006-10 regulatory control period. This will be the first time that this Office will determine rather than advise Ministers on the appropriate level of charges. We have now collected and analysed a significant amount of information from both Scottish Water and other sources. In this draft determination we present the preliminary conclusions of the Strategic Review of Charges. There will now be a period until 23 September 2005 during which stakeholders can comment on the charge caps, which we have suggested are appropriate. The final charge determination will be published at the end of November 2005 by the new Water Industry Commission. The charges will take effect from April 2006.

In February 2005 we received Ministerial Guidance on:

- what Scottish Water was to achieve during the review period 2006-10;
- the principles that this Office should apply in setting charge limits for the period; and
- the borrowing that is likely to be available to Scottish Water during the review period.

The regulatory framework

The regulatory framework for the water industry in Scotland is broadly similar to that in England and Wales. There are separate organisations which are responsible for customer service and economic regulation; environmental protection; and safeguarding public health.

The Water Industry Commissioner for Scotland

Part II of the Water Industry Act 1999 created the post of the Water Industry Commissioner for Scotland and

this Office was established on 1 November 1999. The Commissioner's primary role is to promote the interests of customers of Scottish Water. One of the most important duties is to advise the Scottish Ministers on the amount of revenue that Scottish Water needs to fund its investment programme and meet the required levels of service.

Since this Office was created in 1999, the scope of our activities has broadened. In our first two years of operation we concentrated on the first full Strategic Review of Charges (which covered the period 2002-06) and on collecting the information that was essential to that Review. Gradually our ongoing monitoring of Scottish Water's performance has taken on greater significance. This monitoring role ensures that customers receive improved value for money and can be confident that the benefits of increased investment are realised.

The Water Services etc. (Scotland) Act 2005 strengthens the regulatory framework. It establishes a Commission in place of a single Commissioner. It also sets up a framework for retail competition for non-household customers. This Office will assume the role of licensing authority.

The other principal agencies that are responsible for representing stakeholders' views and regulating Scottish Water are described below.

The Water Customer Consultation Panels

The Water Industry etc. (Scotland) Act 2002 created five Water Customer Consultation Panels (WCCPs) across Scotland to represent the views and interests of customers of Scottish Water in the areas covered by the Panels. The Panels are independent of Scottish Water and of other agencies, including the Water Industry Commissioner.

The Drinking Water Quality Regulator

The role of the Drinking Water Quality Regulator (DWQR) for Scotland was established by the Water Industry (Scotland) Act 2002. The DWQR provides an

independent check that Scottish Water is complying with the drinking water quality regulations. These regulations reflect European Union and other statutory standards.

The Scottish Environment Protection Agency

The Scottish Environment Protection Agency (SEPA) is responsible for a range of activities, in cluding the following.

- Regulating discharges to rivers, lochs, estuaries and coastal waters from industry, sewage treatment works, fish farms, septic tanks etc.
- Protecting and improving the water environment, including River Basin Management Planning under the Water Environment and Water Services Act 2003.

Outcome of the Strategic Review of Charges 2002-06

In the Strategic Review of Charges 2002-06, we advised that if the industry met the challenges it faced, then, by 2006, customers could expect that their bills would not have to increase in real terms in order for them to enjoy an environmentally and financially sustainable service. Scottish Water has made a solid start in meeting the challenges that we re set in the 2002-06 Strategic Review It now appears likely that they will achieve a reduction of some £145 million in real terms over the 2002-06 regulatory control period. It is this significant improvement in performance that underpins the relatively positive charge outlook contained in this draft determination.

Aims at this Review

Customers will rightly expect us to have built on progress since the last Strategic Review of Charges. We have set charges that are sufficient, but no more than sufficient, to deliver the required level of service to customers.

The principal aims of this Strategic Review are to ensure that:

 charges are set at the lowest level that is consistent with the delivery of Ministerial objectives for the industry; and Scottish Water further narrows the gap between its performance and that of the companies south of the border.

Changes to the legislative framework

There have been a number of changes to the legislative framework since the last Strategic Review.

The Water Industry (Scotland) Act 2002

The Water Industry (Scotland) Act 2002, which had the principal function of establishing Scottish Water, also limited the function of this Office to promoting the interests of customers of Scottish Water's core business. As a result, the current Strategic Review of Charges focuses only on Scottish Water's core activities of providing water and sewe rage services to customers in Scotland.

The Act also established the WCCPs.

The Water Services etc. (Scotland) Act 2005

The Water Services etc. (Scotland) Act 2005 further strengthened the regulatory framework.

The Act has two main functions.

- It creates a Water Industry Commission to replace the current Water Industry Commissioner. The Commission will have the power to determine (rather than to advise Ministers on) the maximum level of charges required to ensure that the objectives of the Scottish Ministers can be met at lowest reasonable cost.
- It introduces a framework for competition in the water industry that is consistent with the social, environmental and public health objectives of the Scottish Ministers.

Powers of determination

In England and Wales, Ofwat decides on the appropriate level of prices for the privatised companies south of the

border after taking account of guidance that it receives from the Department for Environment, Food and Rural Affairs (Defra) and the Welsh Assembly Government. The Water Services etc. (Scotland) Act 2005 brings the regulatory framework in Scotland more into line with England and Wales.

Broadly, a key function of regulators is to determine the charges levied by regulated companies. As a counterbalance to the powers of determination, Scottish Water, like other regulated companies, will have a right of challenge. There are two possible avenues for such challenges – the Competition Commission and judicial review.

If a regulated company disputes the regulator's price limits, it can require the regulator to refer the determination to the Competition Commission. The Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators.

In the UK, the decisions of public bodies are generally subject to judicial review. In principle, the purpose of judicial review is to protect citizens from abuse by ensuring that the powers and duties of government and other public bodies are exercised properly and lawfully.

The Water Industry Commission for Scotland

The new Water Industry Commission will comprise a non-executive Chairman and four other non-executive members. The Chief Executive will also be a member of the Commission. The Act clarifies roles and responsibilities.

The Commission will have the power to determine Scottish Water's charges for core services within a policy framework that is set by Ministers. It is important to recognise that Ministers retain responsibility for setting Scottish Water's objectives and for the principles that should apply in setting Scottish Water's charges.

Introducing a framework for competition

The Act includes provisions requiring the Water Industry Commission to introduce a regime to license retail competition for 'non-household' (business and commercial) customers. We propose that the licensing regime should be in place in Scotland by April 2008.

The key provisions relating to competition in the Act are as follows.

- Prohibitions on common carriage and on the provision of water and sewerage services to households by anyone other than Scottish Water.
- A duty on Scottish Water to establish a separate retail business in accordance with the requirements of Ministers.

The approach taken in the Act differs from that which has been introduced south of the border. In England and Wales, the Government decided to allow 'common carriage' 127 but to phase the introduction of competition through the use of thresholds. The Government in England and Wales believes that common carriage raises practical issues for the incumbent water provider relating to how to manage the impact of new entrants gaining access to its infrastructure.

Establishing a licensing regime

The Act introduces two types of licence: one for the retail of water services and one for the retail of waste water services.

The Act places a duty on the Commission to monitor compliance with the terms and conditions of licences and to take any action necessary to ensure compliance. It is important that retailers pay a fair wholesale charge that disadvantages neither businesses nor households. This will be achieved through the determination of the overall level of wholesale charges.

^{27 &#}x27;Common carriage' — where Scottish Water would use its system of water mains to carry water treated by a competitor to the competitor's customers, or where it would use its sewers to carry waste water from a competitor's customers to the competitor's treatment works.

Retail subsidiary of Scottish Water

The Act imposes a duty on Scottish Water to establish a retail subsidiary in accordance with the requirements of Scottish Ministers. This will clearly separate Scottish Water's statutory and licensed activities. The Scottish Water retail business will be in direct competition with other retailers. Scottish Water must not use or be thought to be using its position as sole provider of wholesale services to put competitors of its retail subsidiary at a disadvantage. The retail subsidiary will be subject to the same regulation as other retailers, and must be treated by Scottish Water's wholesale business in the same way as other retailers.

One of the key challenges of this Review has been to set reasonable retail charge caps and the overall level of wholesale charges. There has been no precedent in the water industry for the assessment of charge caps for the wholesale service. This Review has set retail charge caps for household customers and retail charge caps and an overall level of wholesale charges for the 'non-household' sector. In effect, this has required us to decide the appropriate cost and profit of a retailer (ie the difference between retail charges and the overall level of wholesale charges).

The overall level of wholesale charges is critical. If they are too high, new entrants will not be able to cover their costs and consequently will not enter the market. If they are too low, the core business of Scottish Water would suffer and retailers could make excessive profits.

Additional powers to WCCPs

The Water Services etc. (Scotland) Act 2005 also transfers responsibility for dealing with customer complaints from the Water Industry Commissioner for Scotland to the Convenor of the WCCPs.

Other inputs to the Strategic Review of Charges 2006-10

Other factors, in addition to the legislative changes outlined above, have influenced this draft determination.

Better Regulation Task Force

The Better Regulation Task Force was established in 1997. It is an independent body that advises the Government on action to ensure that regulation, and its enforcement, accord with the five Principles of Good Regulation. The Better Regulation Task Force has recommended that regulators should adopt five principles in their approach to price setting: proportionality, accountability, consistency, transparency and targeting.

As part of our commitment to these principles, we have published all of the key information submissions that we have received from Scottish Water, as well as the tools that we have used to complete our analysis, including our financial and tariff basket models.

Ministerial Guidance

The Ministerial Guidance on the objectives for the water industry in Scotland was an important input to the Strategic Review of Charges. It provided information about the investment priorities that must be delivered and the principles of charging that should underpin the determination. The statement also set the borrowing limits that apply (or are likely to apply) during the four-year regulatory control period.

This draft determination has followed the terms of the original commissioning letter and subsequent Ministerial Guidance very closely.

Ministers may provide further guidance in response to this draft determination of charges.

Regulatory returns and letters

Information is critical to effective regulation. We request information through a series of regular information returns and through regulatory letters. These regulatory requests can either be specific one-off requests or may initiate an additional regular request for information.

Scottish Water's business plans

An important element of the process for this Review has been the submission of two business plans by Scottish Water. We issued detailed guidance to Scottish Water on the scope to be covered and information to be included in these business plans. The business plans represent an important opportunity for Scottish Water to set out its views on the levels of service it will provide and the costs that it will incur. These business plans were submitted by Scottish Water in October 2004 and April 2005.

Critical issues

In the long run we believe that customers' interests are best served by a financially sustainable Scottish Water, operating within an effective and balanced governance and incentive framework. This will ensure that each generation of customers meets the costs of the service they have enjoyed.

In regulating Scottish Water, we are interested not only in the level of cost incurred but also in the level of service provided to customers. We have set levels of operating cost that reflect improvements in the level of service we expect to see. We propose that any shortfall in this level of service should reduce the revenue that is made available to Scottish Water in the next regulatory control period.

Efficiency

We promote the interests of customers primarily by encouraging Scottish Water to deliver an appropriate level of service at the lowest reasonable overall cost. An efficient water and sewerage undertaker will carry out the minimum activity necessary to provide the service that is expected, at the lowest cost. It is not acceptable to cut corners in the level of service provided in order to meet the cost reduction targets.

This definition applies equally to both operating costs and capital expenditure.

Delivery of investment

It is critical that assets are maintained in an appropriate way and that problems are not stored up for the future.

In February's Ministerial Guidance, Ministers set out their priorities for the water industry in Scotland for the next regulatory control period.

Customer preferences were gleaned from market research and from responses to the Scottish Executive's consultation document 'Investing in water services 2006-14'. It was important for Ministers to listen carefully to these preferences. However, it was also important to recognise the expertise of the DWQR and SEPA and their understanding of public health and environmental compliance issues.

There have been significant increases in customers' bills in the past few years. In general, customers have accepted that there is a need to invest in our water supply and water environment. However, if promised outputs are delayed this could have an impact on customers because there is a higher risk that an output will not be delivered in full or that it will cost more to deliver. Customers are likely to question why promises of improved service levels have not been delivered when bills have gone up.

We have allowed sufficient capital expenditure to meet the efficient delivery of all of the 'essential' and 'desirable' objectives included in February's Ministerial Guidance.

We have published the baseline investment programme that has been funded in this draft determination in order to improve transparency. If customers have been told by Scottish Water that levels of service will improve as the result of a particular project, they should be able to check if and when that project has been delivered. This will also help ensure that Scottish Water is accountable for the delivery of agreed benefits to customers and to the environment.

Improvements in customer service

It can take several years, using a consistent approach to monitoring, before we can measure customer service performance accurately and with confidence. Important factors, such as the number of properties at risk of sewer flooding or experiencing water pressure problems, involve engineering judgements.

We only began to collect detailed information on customer service in 2001. Uncertainty relating to this information has made it more difficult for us to set robust targets for improvements in the level of service. We also considered that it would not be effective to set customer service targets alongside the efficiency targets. However, Scottish Water did not provide us with information on the costs of certain levels of service. As such, this draft determination has had to make clear the level of service that we expect Scottish Water to provide to its customers. We have therefore set milestones to monitor improvements in the level of service provided by Scottish Water each year.

Establishing financial sustainability

We believe that the revenue increases that we implemented in the Strategic Review of Charges 2002-06 have ensured that Scotland now has a more sustainable water industry. The charge caps proposed in this draft determination reflect this more solid foundation.

If customers are to continue to benefit from a sustainable industry, we must ensure that we invest appropriately in water services. This means that a generation should pay the full costs of the service that it receives and should not store up problems for future generations. The move towards a charge setting mechanism that is tied to changes in the regulatory capital value, and to its funding costs, will make the appropriate level of charges more transparent.

Rigorous monitoring

It is our role to monitor progress against targets, and to verify that service levels to customers do not suffer as a result of management action to reduce costs.

It is important that we are able to measure levels of service to customers in an objective and consistent way, both now and in the future. This requires us to set out in detail the areas of service that we will measure and how they will be measured. We have endeavoured to measure the factors that are important to customers. We have also set out to make sure that customers can understand our analysis of Scottish Water's performance.

We believe that this detailed monitoring ensures that we have fulfilled our statutory duty to have regard to "the economy, efficiency and effectiveness" with which Scottish Water is using its resources. We outline the regulatory contract that we will be monitoring in this draft determination.

Customers only pay once for an agreed output

Regulation has introduced much needed transparency to the process of assessing Scottish Water's performance. In the past it was not clear whether customers had received the benefits, which were promised and for which they had paid.

We have responded by developing our performance monitoring significantly in the past three years. Our more detailed monitoring of the capital programme will also ensure that we can manage the transition from the Quality and Standards III period effectively.

Chapter 3:

Our approach to setting charge caps

Introduction

In this chapter we provide an overview of our approach to this draft determination. During 2004, we published five consultation documents, which set out our proposed methodology for the Strategic Review of Charges 2006-10. These volumes covered the following areas:

- our work plan;
- the regulatory framework in Scotland and the lessons learned from the Strategic Review of Charges 2002-06;
- the calculation of charges;
- the scope for efficiency operating cost; and
- the scope for efficiency capital expenditure.

Regulatory information

Information is vital to effective regulation. We require Scottish Water to submit a number of regular regulatory returns, covering all aspects of customer service, costs, capital expenditure and customer billing.

We have recently appointed a Reporter for the water industry in Scotland. This appointment brings practice in Scotland more into line with the practice of the Office of Water Services (Ofwat) in regulating the companies in England and Wales.

Ensuring transparency and accountability

In preparing this Review, we have aimed to be transparent and accountable. We held stakeholder information days approximately every six weeks. These provided an opportunity to outline progress and hear the views of stakeholders. We also held a series of three separate briefings for Members of the Scottish Parliament. We have made our analytical tools available to stakeholders.

This draft determination is the culmination of more than a year's work. The main milestones leading up to this draft determination were as follows:

- Minister's commissioning letter for the 2006-10 Strategic Review of Charges;
- Scottish Water submits its Annual Return for 2003-04:
- Quality and Standards III consultation;
- · Principles of Charges consultation;
- Consultation on our approach to this Review
- Scottish Water's first draft business plan;
- Ministerial Guidance: and
- Scottish Water's second draft business plan.

The next steps will be as follows:

- Scottish Water submits its Annual Return for 2004-05;
- WICS' draft determination of charges;
- opportunity for representations by stakeholders; and
- the new Water Industry Commission makes its final determination of charges 2006-10.

External advice

Where appropriate, we have taken advice from a number of companies with particular financial, economic and engineering expertise.

In addition, we have benefited from the advice of three senior advisors: John Banyard OBE, Sir Ian Byatt and Professor David Simpson. We believe that in preparing this Review, much has been gained from the fresh perspective that these respected experts provide.

We also sought detailed comments on this draft determination from Thomas Sharpe QC and his legal team. Their comments have been incorporated into each of the volumes.

Framework for the Strategic Review of Charges 2006-10

The Water Industry Commissioner for Scotland has the general function of promoting the interests of customers. We do this primarily by encouraging Scottish Water to become more efficient. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers.

In the Strategic Review of Charges 2006-10 we have sought to minimise the exposure of Scottish Water's customers to operational and financial risks. We commissioned a report from ING Barings on the privatised English and Welsh companies' access to debt. We were keen to ensure that there are similar effective controls on access to borrowing in Scotland. If there are no such controls, the incentives to achieve efficiency targets on time are significantly reduced.

Effective controls on access to debt are an important part of establishing a tight budgetary constraint on the regulated body. A properly tight budgetary constraint will focus management attention on delivering orgoing improvements in value for money to customers.

Some stakeholders have suggested that the industry should borrow more and reduce charges to customers. This approach is not consistent with a goal of maintaining stable charges in the medium to long term. It would also reduce the industry's flexibility to withstand an operational shock.

From a customer perspective, it is important that the industry is managed on a sustainable basis. The owner must ensure that management face a tight budgetary constraint and must monitor performance clearly. The owner will also need to take difficult decisions in the event that performance (within the control of management) lags behind what is expected.

The calculation of charges

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scotlish Water's 2004 regulatory return, it would cost some £27 billion to replace all of the water industry's assets in Scotland. This is more than £5,000 for every person in Scotland.

The effectiveness and value of assets decline over time and customers should bear these costs as they receive the benefit from use of the assets. The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc).

From a regulatory point of view, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge for each type of asset to be recovered from customers' charges.

Non-infrastructure assets are grouped into five categories: very short (assets having a life of up to five years), short (assets having a life of six to 15 years), medium (assets having a life of 16 to 30 years), medium/long (assets having a life of 31 to 50 years) and long (assets having a life exceeding 50 years).

The role of a regulator is to set charges that are sufficiently high — but no higher — to ensure the sustainable delivery of the desired level of service. We have therefore scrutinised costs carefully.

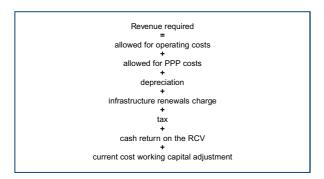
We have moved towards a Regulatory Capital Value (RCV) method of setting charges in this draft determination. This will facilitate comparisons between Scottish Water and the industry south of the border. Scottish Water receives a rate of return on its RCV. Efficient investment in new assets is added to the RCV. Depreciation (reflecting the costs of using existing assets) reduces the RCV.

The rate of return is the cost associated with managing and financing the above-ground asset base. The cash cost of replacement is covered by the depreciation charge.

The product of the RCV and the allowed rate of return gives the total return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

The revenue that we allowed Scottish Water was calculated as follows:

Figure 3.1: How we calculated Scottish Water's revenue



We have set revenue such that Scottish Water will comply with all cash-based financial ratios (used by Ofwat in its 2004 final charge determinations) if it meets the terms of its regulatory contract in full.

The allowed level of revenue includes an appropriate allowance for operating costs. Our assessment of operating costs takes into account inflation, the scope for efficiency and an allowance for efficient new operating costs. It is important to highlight that our assessment of efficiency includes a detailed comparison of both the relative level of cost incurred and the relative level of service delivered.

Monitoring the RCV and the ratio of total debt to the RCV should therefore provide stakeholders with a useful indicator over the long term of the financial performance of the water industry in Scotland.

Charge caps and tariff baskets

In this Strategic Review and in line with the new

regulatory framework, we have determined a series of charge caps rather than a general cap on revenue. A charge cap largely insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory control period.

We established tariff baskets to cover the core services provided by Scottish Water. The use of tariff baskets also helps to ensure that the principles of charging determined by the Scottish Ministers are applied in a transparent way.

A definition of tariff baskets

A tariff basket includes all of the tariffs that impact on customers who receive a particular service. For example, if measured non-household water customers were considered as a group, all of the tariffs that impact on them would be included. Such a tariff basket would therefore include the standing charges relating to the different sizes of connection available and the volumetric tariff. The balance of tariffs within the basket will be determined by the number and type of connections, the amount consumed and any increases or decreases in the tariffs included in the basket.

Total revenue is determined by adding together the output of each tariff basket. The revenue from an individual tariff basket is assessed by calculating the sum product of the relevant customer base and relevant tariffs.

Table 3.1: The use of weighted average tariffs

	% increase (D)	% of total revenue (E)	Weighted % increase (D x E)		
Tariff A	5%	50%	2.5% (A)		
Tariff B	-5%	20%	-1% (B)		
Tariff C	20%	30%	6% (C)		
Weighted average (A+B+C)	-	-	7.5%		

The weighted average increase provides a reasonable indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change. We will scrutinise carefully any material divergence in tariff changes within a basket. For the purposes of calculating the effect of this determination

on our standard customers, we have assumed that each tariff in each basket has been increased by the same amount.

Our approach to tariff baskets

In England and Wales tariff baskets are defined in condition B of each company's operating licences. Scottish Water does not have a licence and, prior to this draft determination, we did not use tariff baskets.

We have defined ten tariff baskets:

- household unmeasured water;
- household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water (20mm connection);
- measured water (25mm connection and above);
- measured waste water (20mm connection);
- measured waste water (25mm connection and above);
- surface water drainage (excluding unmeasured household); and
- trade effluent.

The tariff baskets are described in further detail in Volume 7 of this Strategic Review of Charges 2006-10.

Treatment of large customers

Large customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. Ofwat considers that pricing arrangements for large customers could significantly distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate. Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. We have therefore included large customers in the tariff basket²⁸.

Standard customers

In the Strategic Review of Charges 2002-06, we illustrated the effect of our recommendations with reference to a number of standard customers. We have developed our use of standard customers so that customers can better understand the likely impact of the Review on the bill they pay.

Scottish Water has more than 120,000 non-household customers. These customers will each require a different mix of services from the water and sewerage undertaker and, in due course, from the new retail undertaking to be established by Scottish Water, so the impact of tariff changes will impact on their total bills in different ways.

It is clearly important that our set of standard customers is representative of the actual customer base. This ensures that all customers can find a 'match' that will illustrate the likely impact of tariff changes on their bill.

Tables 3.2 and 3.3 show the standard customer descriptions that we use in this draft determination.

It should be borne in mind that, under new section 29 of the 2002 Act (inserted by the 2005 Act), Scottish Water will not be entitled to depart from the prices set out in its charges scheme unless it obtains the consent of the Water Industry Commission under new section 29E (as so inserted). That consent may be granted only in relation to charges to be paid for services provided to a licensed water or sewerage services provider. This is only if the Commission is satisfied that a customer of the provider has done, or has agreed to do, something which reduces or increases the costs incurred by Scottish Water in providing the services to the provider and the departure is otherwise justified in the circumstances of the case.

Table 3.2: Standard measured customers used in draft determination

Strategic Review of Charges 2006-10	Water		Sewerage			
	Meters (no x size (mm))	Volume (m³)	Meters (no x size (mm))	Volume (m³)	Rateable value	
Convenience store	1 x 20	30	1 x 20	28.5	£5,000	
Garage	1 x 20	100	1 x 20	95	£10,000	
Large restaurant	1 x 20	500	1 x 20	475	£100,000	
Large office	1 x 25	900	1 x 25	855	£750,000	
Retail group	2 x 20 20 x 25 1 x 35	4,500	2 x 20 20 x 25 1 x 35	4,275	£1,700,000	
Food manufacturer 1	2 x 25 1 x 80	50,000	2 x 25 1 x 80	47,500	£100,000	
Food manufacturer 2	2 x 25 1 x 50 1 x 100	100,000	2 x 25 1 x 50 1 x 100	95,000	£260,000	
Large manufacturer	1 x 150	175,000	1 x 150	166,250	£1,225,000	
Brewers	2 x 25 1 x 100 1 x 150	600,000	2 x 25 1 x 100 1 x 150	150,000	£500,000	
Warehouse	1 x 20	10	1 x 20	9	£500	
Large house	1 x 20	110	1 x 20	104	Band H	
High School	1 x 25	2,000	1 x 25	1,900	£18,000	
Hotel	1 x 50	15,000	1 x 50	14,250	£75,000	

Table 3.3: Standard unmeasured non-household customers used in draft determination

Customer name	Rateable value		
Small newsagent/grocer	£200		
Local hairdresser	£920		
Sports club	£2,250		
Supermarket	£30,000		

Financial modelling

We built a financial model to allow us to calculate the revenue that Scottish Water requires to carry out its core functions.

The financial model requires robust and detailed information. We provided Scottish Water with the input tables for the financial model as part of the business plan guidance that we issued in June and December 2004.

The model also contains financial assumptions, including information on interest rates and inflation expectations. In the Review we have used three indexes to measure inflation, namely:

- the retail price index (RPI) for setting charge caps and the calculation of the nominal cost of capital;
- the consumer price index (CPI) for all other nonasset costs; and
- the construction output price index (COPI), to assess the impact of increases in charges on investments.

Table 3.4 outlines the other assumptions that we made in the financial model.

Table 3.4: Other assumptions in the financial model

Title	Assumption	Value for 2006-10
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure, excluding PPP	1.5%
Prepayments and accrued income	Percentage of previous year's revenue	5.5%
Other debtors	Percentage of previous year's revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25.60%
Accruals and deferred income	Percentage of operating expenditure, including PPP	28.0%
Other creditors	Percentage of operating expenditure, including PPP	8.0%
Cash	Balance held by Scottish Water	£2 million

One of the key considerations of our modelling was the financial sustainability of Scottish Water. The model automatically calculated key financial ratios. Our move towards the RCV method of charge setting has allowed us to make direct comparisons of Scottish Water's financial sustainability with that of the companies south of the border. We have compared Scottish Water's financial ratios with those used by Ofwat in its last two price reviews.

Charges have been set to ensure that Scottish Water is placed on a sound financial footing. This should minimise the financial risks to customers.

Of wat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 reviewin its report, 'Final determination: Future water and sewerage charges 2000-05'. These ratios are shown in Table 3.5.

Table 3.5: Ofwat's target ratios for 2000-05

	Water and sewerage companies	Large water only companies	Small water only companies
Historic cost interest cover	Min 2x	Min 2.25x	Min 2.5x
Average gearing (D/D+E)	45-55%	45-55%	45-55%
Cash interest cover (EBITDA Basis)29	Min 3x	Min 3.4x	Min 3.75x
Cash interest cover (EBIDA Basis)30	Min 2x	Min 2.25x	Min 2.5x
Debt payback period (EBITDA Basis)	Max 5 years	Max 5 years	Max 5 years
Debt payback period (EBDA31 Basis)	Max 7 years	Max 7 years	Max 7 years
Cashflow to capital expenditure ratio (EBDA Basis)	Min 40%	Min 40%	Min 40%

In 'Future water and sewerage charges 2005-10: Final determinations', Ofwat outlined the financial indicators that it had used to set prices for the next regulatory period. Table 3.6 shows these ratios.

These financial ratios were adopted by Ofwat after detailed consultation with both the credit rating agencies and the financial markets. The target value of the ratios was set at a level that was consistent with a company maintaining 'investment grade' for its debt.

Table 3.6: Ofwat's target ratios for 2005-10

	Target
Cash interest cover (funds from operations/gross interest)	Around 3 times
Adjusted cash interest cover (funds from operations less capital charges/gross interest)	Around 1.6 times
Adjusted cash interest cover (funds from operations less capital maintenance expenditure/gross interest)	Around 2 times
Funds from operations/debt	Greater than 13%
Retained cash flow/debt	Greater than 7%
Gearing (net debt/regulatory capital value)	Below 65%

How we have used these ratios in the Strategic Review of Charges 2006-10

Where Ofwat has stated that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target.³² We have adjusted charge limits to ensure that Scottish Water remains compliant in 2009-10 with each of the cash-based ratios.

We are also publishing the two debt payback period ratios and the cash flow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. In order to measure the financial strength of Scottish Water on a consistent basis, we believe that it is desirable that Scottish Water should remain within these targets. However, we have not changed charge limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are now outdated. We believe that it is useful, however, to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

Setting the initial RCV

Most UK regulators have used a market value approach to set the initial RCV of their regulated businesses. It is obviously not possible to apply this method for a public corporation such as Scottish Water.

We have set an initial RCV that is consistent with the revenue that Scottish Water needs to finance its functions on a sustainable basis. This value for the RCV is broadly in the middle of the range of potential answers that were calculated using the comparator approach. The comparator method is consistent with the approach used by Ofwat to assign initial RCVs to the water only companies.

Setting the allowed rate of return for Scottish Water

In the private sector, a regulator sets an allowed rate of return. This is often referred to as the cost of capital. The regulator will set this rate of return to reflect current and expected market conditions. The regulator has a duty to set an appropriate rate of return (a weighted average cost of capital) such that an efficient company can properly finance its functions. A company may choose a mix of debt and equity funding, but its cash return on its regulatory capital valve is capped (unless it out-performs efficiency targets).

In the public sector the regulator cannot set the rate of return based on his observation of the cost of capital in

²⁹ We are not concerned if Scottish Water has "too" strong a showing on an individual ratio, unless it is compliant with all the cash-based financial ratios.

³⁰ EBITDA – Earnings before interest, tax, depreciation and amortisation.

³¹ EBIDA – Earnings before interest, depreciation and amortisation.

³² EBDA – Earnings before depreciation and amortisation.

the market. Scottish Water's cost of debt is set by Government. The debt supply curve is perfectly inelastic up to the public expenditure limit set by Ministers.

It is therefore not possible to estimate a market-based weighted average cost of capital (WACC) for Scottish Water. As a public sector organisation it has no contributed equity capital, although it does generate and reinvest trading surpluses. Scottish Water does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

We decided to apply a modified version of the private sector WACC approach. We combined the observed real cost of public sector debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

We set the pre-tax allowed rate of return on the customer retained earnings at the post-tax allowed rate of return for debt. In real terms this rate is low. An advantage of this approach is that there is no incentive for Scottish Water to seek to change its current ratio of debt to RCV. If the return on the customer retained earnings had been greater than the return on debt, Scottish Water would have had an incentive to pay down debt. In contrast, if the return on the customer retained earnings had been lower than the return on debt, Scottish Water would have had an incentive to take on more debt.

Depreciation and additions to the RCV

The value of the RCV changes over time to reflect efficient new investment and depreciation of existing assets. We have to adjust the RCV appropriately to reflect asset use and additions.

Treatment of additions to the asset base

The key role of the RCV in charge setting is to reflect the value of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets this is reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

If Scottish Water has made additions to the RCV that have increased its value (net of depreciation), then the return component of the revenue requirement will be higher and charges will also be higher. As long as capital expenditure has been justifiably incurred in order to provide service to customers, then it is reasonable that customers should remunerate this investment in the RCV.

It is very important, however, that customers are only required to remunerate justifiable expenditure. We have therefore added only appropriate and efficiently procured capital investment to the RCV.

Treatment of depreciation

The role of depreciation is a little more complicated. It affects charges in two ways.

- It is deducted from the RCV and hence represents the amount by which the value of the assets has fallen. Again, assuming a constant rate of return, any reduction of the RCV reduces the amount of return allowed in Scottish Water's revenue requirement.
- The expected depreciation charge is added to the cash return and operating costs to determine the revenue requirement.

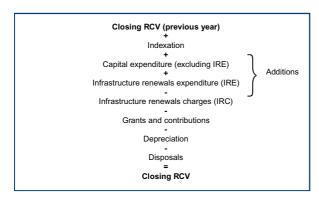
Depreciation therefore influences Scottish Water's revenue requirement both directly and indirectly (by affecting the level of return).

Rolling forward the RCV

The process of adjusting the RCV from its starting value to reflect changes in the asset base is known as 'rolling forward'. In the Strategic Review of Charges we have set the level of efficient new investment and the appropriate depreciation charge. We would adjust the RCV before the next regulatory control period to reflect any extra or inefficient investment.

Figure 3.2 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 3.2: Rolling forward the RCV



In order to ensure that the RCV does not decrease in real terms as a result of general charge rises in the industry itself, we adjust the RCV each year to take account of expected inflation.

Method for setting retail and wholesale charges

The changes to the competition framework contained in the Water Services etc. (Scotland) Act 2005 allow new entrants to obtain a licence to provide retail services to non-household customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine the appropriate overall level of wholesale charges we first needed to define the wholesale and retail activities. This separation of activities was set out in the regulatory accounting guidelines.

We decided to use an accounting approach to setting the overall level of wholesale charges. We also considered alternatives such as the efficient component pricing rule and long run marginal cost, but concluded that they were less robust and increased the risk that our determination of the overall level of wholesale charges could unduly favour either the wholesaler or the new entrant.

The accounting approach

We have therefore used our regulatory accounts to define the accounting costs of the wholesale and retail businesses. These accounting costs include all:

- direct and indirect operating costs (indirect costs include items such as shared legal, IT, and head office functions);
- direct and indirect capital expenditure; and
- financing costs.

Connection charging regime

Throughout the utility industry, issues have arisen in relation to the allocation of costs for new connections between existing and prospective customers. In Scotland, the mechanism for establishing how costs should be shared equitably between existing and prospective customers is currently being redefined by the Scotlish Executive through changes set out in the Water Environment and Water Services (Scotland) Act 2003.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the Water Environment and Water Services (Scotland) Act 2003 by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. In this draft determination we have assumed that these regulations will bring the situation in Scotland broadly into line with that which exists south of the border.

Setting the allowed for level of operating costs

Operating expenditure comprises day-to-day running costs such as employment costs, electricity, raw materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as an operating cost.

We do not include the following in operating costs:

- maintenance of the asset base;
- depreciation;
- infrastructure renewals charge; and
- costs of PPP schemes

Operating expenditure accounts for some 30% of revenue. We collected information about the operating costs incurred by the water and sewerag e service undertakers in the UK using a consistent breakdown of operating expenditure.

We exclude one-off items of expenditure that can affect reported operating expenditure. Examples would include:

- the costs of abnormal pension contributions;
- redundancy payments;
- rates rebates; and
- unusual weather conditions.

The baseline level of operating expenditure is the expenditure incurred in the base year. We apply future efficiency targets to this baseline. We have used the following process to set the baseline level of operating costs for the draft determination:

- We used the 2003-04 regulatory accounts and June Return information to establish the total level of Scottish Water's operating expenditure in that year.
- We identified exceptional and atypical costs and subtracted them from total operating expenditure.
 This allowed us to establish the normal ongoing costs of running the business.
- Finally, we assessed whether there was anything unusual about Scottish Water's cost allocation in 2003-04. We compared Scottish Water with the

companies in England and Wales to ensure that its cost allocation practices were consistent with those in England and Wales. Where necessary, we made appropriate adjustments to Scottish Water's operating expenditure.

The new Water Industry Commission will publish the final determination in November 2005. It will have information for 2004-05 at that stage, and is likely to revise its assessment of the baseline using that information.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in water quality, environmental compliance or levels of service to customers. Such new operating costs are added to the baseline that we described above.

We used the same criteria to assess the level of new operating costs as we used in the Strategic Review of Charges 2002-06. These are as follows:

- Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?
- Is Scottish Water required to provide this additional level of service, and for what reason?
- Has Scottish Water carried out a proper assessment of the proposed new operating expenditure, rather than relying on estimates from contractors/manufacturers or on an arbitrary percentage of the capital cost?
- Has Scottish Water demonstrated management challenge and control over the proposed costs?
- Has Scottish Water compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?

- Do the alternative options include different mixes of operating expenditure and capital investment?
- Has Scottish Water quantified the potential savings to baseline operating expenditure which arise from upgrading works or systems, and offset increases in new operating expenditure accordingly?

Like-for-like comparisons

In order to make reliable like-for-like comparisons, we need to understand the factors that can influence the level of costs incurred by the water and sewerage companies in the UK. These can typically be divided into those that are broadly controllable by management and those that are outside the control of management. We term these factors 'internal' and 'external' respectively.

It is possible to identify a number of external factors that affect the costs of the water and sewerage industry. They include the following:

- difficulty of operating environment (eg population density, topography, types of water source, etc);
- customer mix;
- customer requirements (resolving complaints, etc);
- environmental requirements (eg leakage levels, sewage effluent standards, etc);
- volumes (water consumption, peak use, sewage loads);
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

We can also identify a number of factors that are within the control of management. They include the following:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding purchasing and stocks of materials and consumables;
- the organisation's policy regarding hired and contracted services, for example the use of lawyers and consultants; and
- in the long term, the nature of the assets operated and maintained (size, mix, performance) – over time, water and sewerage service providers can change the assets they own and operate, either by building new ones, decommissioning old ones or making changes to existing assets to modify the way in which they operate.

Calculating relative efficiency

In order to make objective comparisons we need to take proper account of the external factors that influence the level of costs of each company. We use two separate benchmarking models to allow us to assess the relative efficiency of the water and sewerage companies.

The models allow us to compare the actual costs incurred by a water and sewerage company with a predicted level of costs from our benchmarking models. The difference between the predicted and the actual level of costs is an indicator of the relative efficiency of the company. We adjust these results so that the average level of predicted costs is 100. The results for other companies have been adjusted in a similar way. Companies with results that are lower than 100 are relatively efficient, while those with scores higher than 100 are relatively inefficient.

Ofwat's methods of benchmarking

Ofwat uses econometric models to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics. There are nine models for operating expenditure:

- water resources and treatment:
- water distribution:
- water power;
- water business activities;
- sewer network;
- large sewage treatment works;
- small sewage treatment works;
- sludge treatment and disposal; and
- sewerage business activities.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. The models themselves take different forms. These are summarised in Table 3.7.

Table 3.7: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter >300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

We adapted the Ofwat models to reflect the number of small sewage treatment works in Scotland.

We developed two new unit costs for Scotland, both of which were high relative to those in the other size bands. This reflects the fact that it tends to cost more to tre at loads at very small works. We also reworked the Ofwat econometric models using information from Scotlish Water.

The WICS alternative model

We developed an alternative model to assess the efficiency of the water industry in Scotland. In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models so that the alternative model would provide an independent check on the results given by Ofwat's models.

The alternative model splits the water and sewerage business into ten different activities:

- · water abstraction and treatment;
- water distribution;
- business activities (water);
- bad debt (water);

- sewage collection;
- simple sewage treatment;
- complex sewage treatment;
- processing sludge;
- · business activities (sewerage); and
- bad debt (sewerage).

For each of these activities, we determine the principal factors that would affect comparisons of operating costs between Scottish Water and the water and sewerage companies in England and Wales.

We used information from Scottish Water and the water and sewerage companies about each of these cost drivers. The model also takes account of economies of scale.

The purpose of making adjustments to reported costs

It was important for us to consider the results of the Ofwat, modified Ofwat, and the alternative modelling approaches very carefully. Our models cannot take account of all of the external factors that influence cost. These factors may either increase or decrease the level of cost.

We believe that the fact that the Ofwat models have been successfully applied to companies as different as Thames Water³³ and South West Water³⁴, and to both large water and sewerage companies and small water only companies, confirms that the models can reasonably be applied in Scotland.

We asked Scottish Water to draw to our attention any factors (those not included in the models) that would either increase or decrease cost. We believe that we have made appropriate adjustments to the results of the models. To justify an adjustment, Scottish Water has had to provide evidence in the following areas³⁵:

- What is the justification for the special circumstances which demonstrates a material difference from industry norms? Scottish Water was required to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs, over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against upward cost pressures?

Assessing the future efficiency gap

The efficiency of the comparator companies in England and Wales continues to improve. We have taken account of the way in which the performance of the companies south of the border is likely to change over the next regulatory control period. Otherwise, customers in Scotland may have to pay more than is necessary.

Ofwat published the results of its final determinations of charge limits for the companies in December 2004. This has informed our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We have set an allowed for level of operating costs that takes account of the improvements that Ofwat has required the companies south of the border to achieve.

Calculating the total allowed for level of operating expenditure

We have set targets in terms of total allowable operating expenditure (not including depreciation). We have allowed for sufficient operating expenditure for Scottish Water to carry out its operations for each year of the

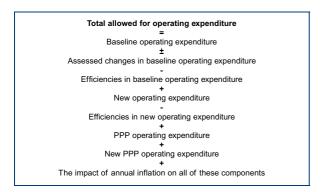
 $^{^{\}rm 33}$ $\,$ Thames Water covers much of the South East of England, including London.

³⁴ South West Water covers Devon and Cornwall.

³⁵ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998.

regulatory period. This is the amount that will be funded through customers' charges. It is made up as shown in Figure 3.3.

Figure 3.3: Total allowed for operating expenditure



Public Private Partnerships

The three former authorities decided to let a total of nine concessions for building and operating waste water treatment plants. These concessions were for a period of 25-40 years.

The concessions were let to joint venture companies which usually consisted of a consultant engineering and design firm, a construction contractor and an operations company. The companies had to accept responsibility for maintenance over the contract period and for the inherent risks of project delays, cost over-runs and volume changes caused by shifts in demand. They were also required to deliver the service within tightly specified parameters. An essential element of PPP is the transfer of risk from the public to the private sector.

We have no doubt that the contracts for the nine projects represented good value for money at the time they were concluded. However, we consider that improvements in Scottish Water's performance have made it less certain that the PPP contracts represent value for money to customers today. We therefore considered setting an efficiency target for PPP. Respondents to our methodology consultation did not consider that this was appropriate. However, one respondent did suggest that we should monitor costs carefully to ensure that the contractors were delivering the required level of service. Increases in PPP costs have had to be justified in detail.

Another respondent reminded us that PPP may represent the most practical or best value method of delivering the required outputs. We have taken this view into account in this draft determination.

Levels of service

We have developed our use of the benchmarking approach for quality of service regulation.

Our analysis of the scope for efficiency has not been adjusted to take account of differences in the level of service. However, we have set clear milestones for Scottish Water's customer service performance. If Scottish Water does not meet these standards, we would be minded to adjust the allowed for level of operating costs at the next charge determination downwards to reflect the lower level of service provided.

Historic investment in Scotland

It is important to put the current and past levels of investment in Scotland's water industry into a proper context. If we compare the level of investment in Scotland with that in England and Wales using the measure of investment per property, we see that investment will have matched that in England and Wales over the period 1984-2006, as Figure 3.4 shows.

23,500 Soptemb Section 5 S

Figure 4: Cumulative investment per property in Scotland and in England and Wales 1984-2006³⁶

The conclusion from this analysis, therefore, is that if there is a significant backlog of investment in Scotland relative to that in England and Wales, it can only be a result of historical and current inefficiency, not a lack of investment funds. We are not persuaded by Scottish Water's argument that the percentage of the total asset base that has been replaced in England and Wales over the same period is much greater than in Scotland. To be useful, such a comparison would rely on both a robust asset inventory and asset valuation.

Scottish Water has accepted that more work is required in this area. Customers in Scotland have paid for, and so deserve, an equivalent standard of service to that which customers in England and Wales receive.

Potential overhang from Quality and Standards II

In its second draft business plan, Scottish Water states that it expects to invest a total of £1,941 million by the end of March 2006. The plan also states that some £283 million will have to be invested after March 2006 in order to deliver the Quality and Standards II objectives.

We have accepted Scottish Water's estimate of the overhang, although we have removed the claim for extra capital inflation beyond the current regulatory control period. Our analysis has shown that Scottish Water will deliver £274 million of the Quality and Standards II investment programme after March 2006. Accordingly, we have adjusted the initial RCV down to reflect the remaining outputs.

We will continue to monitor all of the projects in the WIC 18 baseline³⁷ until we are satisfied that Quality and Standards II has been delivered. The Reporter will have an important role in confirming that the full investment programme has been delivered.

Lessons learnt from establishing the baseline investment programme for Quality and Standards II

One of the disappointments of Quality and Standards II has been the difficulties faced by stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme. We have addressed this by publishing the agreed list of projects for this regulatory control period. This list contains a good degree of definition and detail and we will monitor the delivery of projects that have been funded in this draft determination with great care. We will ensure that customers are not asked to pay twice for the same output.

³⁶ Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

³⁷ The WIC18 baseline attempted to define all of the projects that comprised Quality and Standards II. It took some three years to define all of the projects satisfactorily.

Investment programme deliverability

We have funded the largest capital programme that is consistent with the Ministers' objectives and efficient delivery. This has taken account both of experience south of the border and the fact that Scottish Water can learn from best practice in the delivery of c apital investment.

How Ofwat assesses capital expenditure efficiency

Capital maintenance econometrics

Ofwat's econometric modelling of capital maintenance uses statistical regression analysis to establish a relationship between the costs incurred by companies and a defined set of cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By controlling the principal external cost drivers in the models, Ofwat can determine relative efficiency with a good degree of accuracy.

The cost drivers that are included within the econometric models are known as 'explanatory factors'. There are nine models and they take different forms. These are summarised in Table 8.

Table 8: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors	
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.	
Water distribution	Log unit cost	Population, proportion of total mains length with diameter >300mm.	
Water power	Log linear	Distribution input, average pumping head.	
Water business activities	Log linear	Number of billed properties.	
Sewer network	Log linear	Sewer length, area, resident population, holiday population.	
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.	
Small sewage treatment works	Unit cost	Works size, works type, load.	
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.	
Sewerage business activities	Unit cost	Number of billed properties.	

We have used these models to assess the level of capital maintenance for Scottish Water. This is an important benchmark which ensures that customers receive value for money both in the short and in the longer term.

Capital works unit costs

We have used the Ofwat capital works unit costs, or 'cost base', approach to assess the relative efficiency of Scottish Water in procuring and implementing capital projects. Ofwat uses this technique to inform its assessment of relative efficiency for both capital maintenance and capital enhancement expenditure.

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. We have compared the standard costs submitted by Scottish Water with those of the companies south of the border to assess relative procurement efficiency. We adjusted the results of our capital cost modelling using the same approach as we adopted for making adjustments to the level of operating cost.

Review of the capital programme

We have used both the Reporter and two firms of specialist engineers to review the content, scope and costing of the proposed capital programme. It is important to ensure that we allow sufficient funding to deliver properly scoped solutions to the objectives set by Ministers.

Conclusion

Our approach to the Strategic Review of Charges 2006-10 has drawn on the tried and tested methods that Ofwat uses in regulating the companies in England and Wales. We have also sought to learn from our work in completing the Strategic Review of Charges 2002-06, and from the representations that were made to us. We believe that our approach is proportionate and transparent and is fully consistent with the Ministerial Guidance.

Chapter 4:

Economic regulation of the public sector water industry in Scotland

Introduction

This chapter provides further information about the framework for this draft determination. We explain how we have:

- adapted incentive-based regulation for use in the public sector;
- introduced regulatory accounts;
- defined the critical split between wholesale and retail activities; and
- taken account of the Ministerial Guidance and of Scottish Water's first and second draft business plans.

These factors have had an important influence on this draft determination of charges.

The role of regulation

Monopolies can exist in both the public and private sectors. An effective monopoly is present when most, if not all, customers do not have any real choice and when the dominant market supplier determines the terms and price of supply.

While a few companies may have some choice in their arrangements for a water and sewerage service, Scottish Water is an effective monopoly. Similarly, in England and Wales, although an industrial or commercial customer in one area can request a service from a supplier in an adjoining area, in most cases this is not economically viable.

The purpose of regulation is to seek to ensure that such monopoly businesses act in the customer interest. Regulators can take steps to encourage the supplier to provide a better level of service to customers (customer service regulation) or to reduce costs while maintaining the level of service (economic regulation).

Types of regulatory frameworks

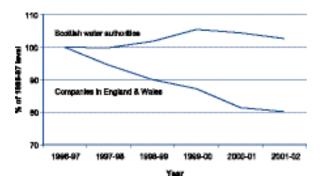
There are three main regulatory models:

- Cost-of-service (rate of return) regulation: in this model, the regulator sets the return that can be earned on investment by companies. This enables a company to recoup, at a set rate, the costs and investments that it has put in to provide the services provided these are in line with the agreed budget. Cost-of-service regulation includes no incentive to minimise costs or to avoid 'gold-plating' of assets.
- Price cap regulation: price cap regulation (RPI-X) sets the maximum prices that companies can charge for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to improve returns to the shareholder or, in the case of Glas Cymru, deliver the rebates to customers' bills that were promised by management.
- Franchise regulation: under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

How economic regulation of the Scottish water industry has already benefited customers

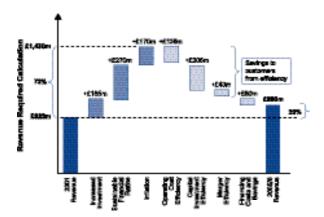
In their last years of operation, the three former water authorities were becoming less efficient at a time when the industry in England and Wales continued to improve its performance. This is illustrated in Figure 4.1.

Figure 4.1: Trends in base operating costs of predecessor authorities 1996-97 to 2001-02



The scope for efficiency that we identified reduced the required increase in average charges from some 73% to a still significant, but more acceptable, 20%.

Figure 4.2: The scope for efficiency and other savings



The actual level of operating costs inherited by Scottish Water was some £20 million higher than expected when we completed the Strategic Review of Charges 2002-06. We now expect that Scottish Water will have cut operating costs by some £145 million a year in real terms during the regulatory control period 2002-06. Scottish Water has done well over the last four years and these savings will continue to benefit customers in the period 2006-10. Total real operating cost savings will be greater than projected in our advice to Ministers.

Developing incentive-based regulation in the public sector

Background

In the private sector, the regulator has a duty to ensure that an efficient company can meet its licence obligations. As the regulator of a public sector corporation we have to ensure that Ministers' objectives are delivered for the lowest reasonable overall cost.

Incentive-based regulation

All of the UK economic regulators have used price cap (RPI-X) regulation. It is generally accepted that RPI-X price cap regulation has led to lower prices and higher levels of service for customers. Some commentators, however, have suggested that the approach is not consistent with a long-term investment strategy.

RPI-X regulation limits the prices that companies are allowed to charge their customers. The regulated company has to decide how to deliver the required level of service for the revenue that is available to it. This focuses management's attention on reducing costs.

Under the RPI-X framework, companies benefit if they can provide the required level of service for a lower cost than was allowed by the regulator. This difference increases returns to shareholders.

Customers benefit in the medium to long term because the regulator is able to set prices at a lower level in future regulatory control periods to reflect the lower reported costs of the regulated organisation. In the next regulatory control period, the regulated company will have to work harder to out-perform its regulatory contract.

In 'not-for-profit' private sector companies³⁸ the extra returns available from out-performing the regulatory contract may be available to customers more immediately. The company's managers have to determine how best to use any such extra return. They are likely to consider the following options:

³⁸ This includes companies such as Glas Cymru, a 'not-for-profit' company that owns Dwr Cymru Welsh Water, and Network Rail Ltd.

- Improving the financial strength of the company, for example by building reserves or by undertaking spending that will facilitate future improvements in efficiency. Such action would benefit customers in the medium to long term.
- Investing to improve the levels of service to customers.
- Delivering charge cuts for customers.

In July 2001, Frontier Economics³⁹ concluded that RPI-X creates a strong incentive to achieve efficiency gains. In their view, incentives are at their strongest when the regulator can identify good external benchmarks to estimate an efficient level of costs. This is consistent with our view that external benchmarking of Scottish Water against the privatised water companies in England and Wales is key to establishing the level of performance that should be required of Scottish Water.

In this draft determination, we have used a tailored version of RPI-X, which has been designed to take account of the public sector status of the water industry in Scotland.

In this regard we have sought to learn from the experience of the Postal Services Commission (Postcomm), the only other UK regulator of a public sector company. Postcomm has indicated that it wants Royal Mail to have strong incentives to make efficiency savings, but notes the need to take account of market uncertainties as competition develops.

There are clearly close parallels between Postcomm's decisions on price limits and this draft determination. In particular, we have both needed to take account of the impact of the likely introduction of increased competition in our respective industries. We have also both had to consider how to adapt the incentive-based framework to the circumstances of the public sector post and water industries.

Our analysis suggested that the framework for the water industry in Scotland needed to take account of the following:

- The objectives of the Government as the owner: the Government is primarily interested in the efficient delivery of its objectives.
- A reduced incentive to out-perform the regulatory contract because the Government is a different type of owner.
- Sensitivity concerning management bonuses: public sector businesses are relatively rare. It is difficult to reconcile the pressures of a public sector pay policy with the need to create a real incentive for outperformance.
- Access to government funding: in the private sector the providers of finance require a return on any capital provided. The public sector may not be as rigorous in its allocation of capital and as a result the regulated company may not face a truly hard budgetary constraint.

This last factor is particularly important. Price cap regulation seeks to establish a tight budgetary constraint which requires the company's management to reduce the costs that it incurs. In the public sector it is important that the owner does not accept a lower level of performance than that set in the regulatory contract. In this regard we are encouraged by the February Ministerial Guidance on the principles of charging.

If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view, their response should not have an adverse impact on customers.

Recent developments in the UK utility sector

RPI-X regulation has developed significantly in the past 20 years. It now appears that regulators initially underestimated the scope for efficiency. More recently, however, regulators have set tougher price controls. Companies have responded by attempting to 'sweat their assets' and reduce their cost of capital, but most have at least matched the improvement in efficiency required by the regulator.

³⁹ Frontier Economics, 'Incentives', published in July 2001 and included as Appendix 5 in the National Audit Office report 'Pipes and Wires'.

The price reviews in 1994 and 1999 undertaken by the Office of Water Services (Ofwat) illustrate how RPI-X regulation has developed. In its 1994 price review, Ofwat set efficiency targets that averaged between 3.3% and 4.3% for maintenance and enhancement expenditure for both water and waste water services. Ofwat⁴⁰ has indicated that the companies delivered efficiency savings of 20% for water and of more than 10% for waste water capital investment.

In 1999, Ofwat set efficiency targets that ranged from 6% to 11.5%. Our analysis suggests that the companies have continued to improve efficiency faster than their regulatory contracts required. Current figures show that the companies have achieved efficiencies in water services of around 5% and for waste water services of around 10%⁴¹.

In recent years, industry commentators have made a number of criticisms of the RPI-X mechanism. These fall into four main categories:

- the impact on investment;
- · the strength of incentives;
- · financing of investment; and
- · the impact of risk.

Each of these criticisms was addressed in the National Audit Office (NAO) report 'Pipes and Wires'. The NAO found that price cap regulation was fit for purpose. In particular, it found no evidence of underinvestment or of a lack of incentives to improve performance.

Some regulated companies responded to the tougher regulatory settlements at the end of the 1990s by focussing on the cost of capital. These companies sought to lower their effective weighted average cost of capital (WACC) by increasing their level of debt.

The two highest profile examples are the Yorkshire Mutual proposal and the creation of Glas Cymru. The Yorkshire proposal involved establishing a community 'not-for-profit' mutual company that would be 100% debt

financed. It was envisaged that the mutual company would award all of the initial operating contracts to the Kelda Group plc (the pre-split holding company) and that competitive tendering procedures for the contracts would be introduced on a phased basis. Ofwat required the mutual to be made completely independent of its former owner and also required safeguards to be put in place that would protect members of the mutual company. The Kelda Group withdrew the proposal.

Glas Cymru

In November 2000, Glas Cymru agreed its purchase of Welsh Water from Western Power and Distribution (WPD). In structuring this transaction, senior managers at Glas Cymru took detailed account of the conditions set out by Ofwat for the creation of the Yorkshire Mutual. Glas Cymru was able to satisfy Ofwat that the proposal was consistent with customers' interests.

It appears that the 'not-for-profit' debt-funded Glas Cymru (which owns Welsh Water) has reduced the cost of capital and improved the level of service provided to customers. We believe that Scottish Water could learn some useful lessons from the structure and governance of Glas Cymru. Both companies are expected to match or exceed the levels of service provided by comparator companies.

Glas Cymru represents an interesting case study for three reasons:

- · the way risk is managed;
- the company's emphasis on transparency; and
- · the use of incentives.

An additional factor that reduces the risk to customers is that Ofwat added a condition to Welsh Water's licence which prevents it from diversifying beyond its core activities of providing water and waste water services in Wales.

One of Glas Cymru's most striking features is the transparency that surrounds its operations. The

⁴⁰ Ofwat public ation 'Financial performance and capital expenditured' the water and sewerage companies in England and Wales 2003-04', p age 46.

⁴¹ Based on performance up to 2003-04.

company's website contains all of the important financial information. This transparency allows public and regulatory scrutiny of all of the company's operations. Such scrutiny may replace (at least to some extent) the scrutiny of shareholders and investment analysts. It also reassures customers that senior managers deserve the bonus payments that have been made. We believe that a similar commitment to transparency would benefit Scottish Water's customers.

Glas Cymru has created a financial buffer (a reserve of £350 million) to protect customers from any operational or financial shock. This replaces the normal equity 'cushion'. This buffer not only reduces Glas Cymru's cost of capital but also protects customers from the impact of a financial shock. If there were to be an unexpected event, such as a drought⁴², the cost of that event could be met from reserves rather than by an increase in prices.

Welsh Water's performance appears to have improved significantly since its purchase by Glas Cymru:

- the level of service to customers has improved;
- prices have been cut; and
- · operating cost efficiency has improved.

Glas Cymru represents a good example of how incentive-based regulation can be effective in a non-equity environment. A strong governance framework and the creation of a financial buffer seem to have played an important role in this success.

The experience of the Post Office

The Post Office provides another interesting example, within the public sector, of the importance of establishing a financial buffer. In recent years this buffer has helped ease the transition to a competitive postal services market.

The Post Office (including the telephone and mail services) became a public corporation as a result of the

1969 Post Office Act. The Government required a proportion of any retained profit to be used to purchase government securities or 'gilts'. These gilts remained on the balance sheet of the Post Office, but could only be used at the direction of UK Ministers.

The 'Mails Reserve' was endorsed by the 1999 White Paper on postal reform⁴³. This White Paper set a target that 40% of retained earnings should be invested in gilts⁴⁴. There is also a minimum value of gilts that the Post Office is required to purchase each year. This limit has been set so that public expenditure planning is not affected by fluctuations in the Post Office's trading. The White Paper also set out the circumstances in which Ministers would use the financial reserve that has been accumulated.

The current value of gilts held by the Post Office is well over £1 billion. This is a very significant sum relative to any financial or operational risk that the Post Office is likely to face. It would seem sensible to adopt a similar approach in the way in which the public sector water industry in Scotland is funded.

⁴² As occurred in Yorkshire in 1995, and which is estimated to have cost Yorkshire Water £250 million.

⁴³ Entitled 'Post Office reform: A world class service for the 21st century' published 8 July 1999 and available via the DTI's website at this link: http://www.dti.gov.uk/postalservices/white_paper.htm

⁴⁴ In 2003 the Secretary of State for Trade and Industry, Patricia Hewitt, issued a direction under Section 72 of the Postal Services Act 2000, updating this gilt scheme and naming it 'Mails Reserve'.

Our approach to incentives

We have shown how price cap regulation limits the budget that is available to a regulated company for delivering a specified level of service. If a company succeeds in reducing the costs that it incurs, it is able to retain the difference for a set period.

In the private sector model this allows shareholders to receive a greater return on their investment. Shareholders typically choose to align management bonuses with out-performance of the regulatory contract. The Glas Cymru case study demonstrated how out-performance of the regulatory contract can be returned to customers or can be invested to protect customers from any future operational shocks.

Our analysis of incentive-based regulation has led us to draw the following conclusions.

- There should be a tight budgetary constraint: price cap regulation will not be effective if the organisation believes that there could be an advantage from spending more than is absolutely necessary.
- There should be an incentive for the regulated company to out-perform the regulatory contract: the contract must be transparent and achievable and it must be monitored rigorously.
- The interests of management should be aligned with the level of performance that the regulated company needs to deliver under the regulatory contract.
- Incentive-based regulation benefits customers: in the private sector, out-performance will increase shareholder returns initially but this improved performance is passed on to customers at the next price determination. In not-for-profit companies (such as Glas Cymru) or in the public sector, outperformance can be used to bolster financial reserves, to cut prices or to improve the level of service.

Our review further highlighted that incentives for improving capital efficiency may have to be somewhat

different in the public sector. In the private sector, reductions in capital spend from increased efficiency will bring benefits to shareholders and result in lower prices for customers. In the public sector there are potentially different pressures. High levels of investment are typically viewed as politically desirable, particularly where there are customer service and/or network performance issues. This could reduce the incentives on the regulated company to out-perform the regulatory contract on capital expenditure.

In the public sector context, this risk can be mitigated if any out-performance of the capital expenditure regulatory contract is invested in additional capital projects which improve customer service, the environment and/or public health.

The financial framework for stable charges

This Strategic Review of Charges sets maximum charges for customers which do not increase in real terms. The prospects for charges in the 2010-14 regulatory control period will depend on how Scottish Water improves its cost efficiency.

It is also important that we make progress in creating a financial buffer that would be capable of absorbing any operational shocks.

The importance of the tight budgetary constraint

Regulators set price or revenue caps in order to create a tight budgetary constraint for the regulated company. Most regulated companies are subject to pressure from shareholders to out-perform the regulatory settlement. In other words, the regulator is effectively setting a minimum acceptable level of performance. In the case of Scottish Water it is important that both the owner and the Board recognise that the regulatory settlement (or contract between the regulated company and its customers) is the minimum level of acceptable performance. We have proposed charge caps on this basis.

This draft determination also sets out a forecast of the likely new borrowing that will be required by Scottish Water. We have assumed that this level of borrowing should be increased only in exceptional dircumstances and only if the new Water Industry Commission agrees that more borrowing is an appropriate response to the exceptional circumstances This is not wholly dissimilar from the stand-by credit that is available to Welsh Water.⁴⁵

Establishing a buffer to absorb operational shocks

At present, Scottish Water's customers are more immediately exposed than customers in England and Wales to the financial risks of the business. In England and Wales, the presence of private equity acts as a significant shock absorber, and as a result protects customers. The creation of the not-for-dividend company Glas Cymru required Ofwat to think more about corporate governance and about protecting customers from the impact of any such operational shocks.

We examined four ways to develop a buffer to withstand operational shocks. These involve using the revenue flexibility generated by out-performance of the regulatory contract to:

- improve financial ratios by borrowing less;
- buy a safe, liquid asset;
- pay dividends to a contingency fund held by the Scottish Executive; and
- accelerate the investment programme.

In the medium term, we believe that the creation of a financial buffer is important. The most effective way to create such a buffer would be through the purchase of a liquid security, such as index-linked gilts. We recognise that it may take some time to agree the details of this proposal. In the meantime, we believe that any outperformance by Scottish Water should be returned to customers, if necessary, through a reduction in future charge caps. This is consistent with the need to maintain a tight budgetary control.

Background to the introduction of regulatory accounts

Regulators rely on being able to make like-for-like comparisons between companies (or over time) to form a view about the performance of a regulated company and ensure that customers receive value for money.

In order to be sure that the comparative analysis they carry out is reliable, regulators need accurate information. Most regulators rely on regulatory accounts to provide this information. These accounts provide detailed information that has been clearly and consistently defined.

Ofwat implemented regulatory accounts in 1992-93 in order to inform its first full price review of the water industry in England and Wales. We have introduced regulatory accounts for this draft determination in order to facilitate performance monitoring, the setting of the overall level of wholesale charges and to improve our understanding of the performance of the core business.

The introduction of regulatory accounts will ensure that the new Water Industry Commission complies with the amended remit that results from the Water Industry (Scotland) Act 2002 and the Water Services etc. (Scotland) Act 2005.

Core/non-core activities

Scottish Water's primary role is to provide water and waste water services to customers. These services are sometimes referred to as its core activities, or as the core business. However, Scottish Water also seeks to provide customers with 'value added' services. Some of these are closely related to its core activities, others are quite separate.

Our advice to Ministers in the Strategic Review of Charges 2002-06 covered both core and non-core activities of the then three authorities. We expressed our concern about the lack of focus on the core business. In particular, we noted the potential increase in risk within the business caused by diversification into markets where competition existed, and questioned investment in non-core activities.

⁴⁵ See Chapter 6 of Volume 7 for more detail.

Even if non-core activities were profitable straight away, there is a danger that these profits are achieved at the expense of not realising the potential for efficiency in the core business. If management time is diverted away from improving efficiency in order to focus on new ventures, this may disadvantage customers. We therefore welcomed the Water Industry (Scotland) Act 2002 which limited our remit to promoting the interests of customers of the core business. This brought our remit more into line with that of Ofwat.

Protection of core customers in England and Wales

In England and Wales there is a clear separation of appointed (core) and non-appointed activities. The following factors are critical:

- The appointed water and sewerage business is ring fenced by means of licence conditions.
- There is effective accounting separation of the core activities.
- There are clear transfer pricing rules.

This regime has been effective, as even when holding companies have experienced difficulties (for example Hyder plc and Enron), these problems have not impacted on customers of the water and sewerage subsidiary company.

Practical implications of the Water Industry (Scotland) Act 2002

The change in our remit to promote the interests of customers of Scottish Water's core business has had a major impact on this Strategic Review.

In this draft determination we have set charge limits for Scottish Water's core activities – water and waste water services to household customers and all wholesale services to licensed retailers. In setting charges, we have considered only the costs incurred by Scottish Water in undertaking its core activities. We have not

taken account of the funding needs of Scottish Water's non-core activities.

We have drawn on the experience of Ofwat in preparing a detailed description of core activities for regulatory accounting purposes.

We have treated the following activities as core activities for the purpose of the regulatory accounts⁴⁶:

- Abstraction, treatment, storage, conveyance and distribution of potable water.
- Conveyance, treatment and disposal of waste water, including public septic tanks.
- Water and environmental quality management.
- Emergency planning and response.
- Physical disconnection.
- Household customer accounting and billing.
- Household customer credit management.
- Household customer contact management.
- Household customer billing complaints, enquiries resolution and Guaranteed Minimum Standards (GMS).
- Operational complaints resolution and GMS for all customers.
- Provision of water, sewerage and trade effluent services to non-household customers under ss.17 and 20 of the 2005 Act.

The retail and wholesale separation

The Water Services etc. (Scotland) Act 2005 will introduce a framework for competition. Until recently there was little competition in the supply of water and sewerage services. There were a few small

⁴⁶ This list also takes account of the retail/wholesale split described in Chapter 9 of Volume 4.

brokerage⁴⁷ (retail) deals and some larger users had made alternative arrangements outside the public network.

The Water Services etc. (Scotland) Act 2005 will allow retail competition for non-household customers. The Act will require the new Water Industry Commission to set both an overall level of wholesale charges and a retail charge cap.

We have used the regulatory accounts to define Scottish Water's retail and wholesale activities in detail. Our starting point was to define all customer-facing activities as retail. In this model, a non-household customer should only interact with their retailer. This is similar to the situation in other industries. We would not normally seek to return a faulty garment to the wholesaler or to the factory where it was made.

We identified the following retail activities:

- retail pricing and tariffs;
- the billing process;
- collection of charges;
- · debt follow up and debt management;
- meter reading and customer meter operations;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues;
- · marketing;
- managing the connection/disconnection process;
- scheduling septic tank emptying; and

supporting wholesale emergency responses.

The overall level of wholesale charges that we have set is consistent with this definition.

Licensing regime

Under the framework created by the Act, all new entrants and the retail subsidiary of Scottish Water will have to be licensed. Licences will govern the relationship between Scottish Water, its retail subsidiary and new entrants.

The 2005 Act will require the new Commission to administer the licensing regime. New entrants will be required to demonstrate that they have the necessary financial resources and managerial and technical competency to satisfy the licence conditions.

The principles of regulatory accounts

We introduced regulatory accounts to the Scottish water industry to:

- improve the transparency of our monitoring and comparisons of performance;
- separate core and non-core activities; and
- · separate retail and wholesale activities.

We took account of a number of Scottish and UK-wide factors in finalising the regulatory accounts for the Scottish water industry. The key principles that we established were that they should be:

- consistent, where appropriate, with Ofwat's regulatory accounts;
- reconcilable with statutory accounts;
- auditable;
- in the interests of stakeholders;
- consistent with accepted regulatory accounting practice; and

⁴⁷ Brokerage: a deal by which water is sold to customers by a third party, who is not responsible for anything other than the final supply of water to a customer's premises.

 would facilitate the collection of information for monitoring performance and setting charge caps.

We also identified the following key principles that should underpin the separation of retail and wholesale activities:

- practicality
- flexibility
- cost recovery, and
- transparency.

We received general support for our view, expressed in our methodology consultation, that there should be a single definition of wholesale and retail activities. The overall level of wholesale charges will include all of the services that must be provided by Scottish Water (no matter how those are delivered to the retailer).

The retail margin (the difference between the retail charge and the overall level of wholesale charge) covers the costs of all of the activities that are the responsibility of the retailer (irrespective of whether the retailer chooses to undertake all of these activities itself or not).

We recognise that it is possible that some new entrants may want to expand the scope of retail activities further. We have endeavoured to ensure that we have collected sufficient information about the costs of activities to respond to any such future development.

We also believe that our regulatory accounts have captured sufficient information about costs and activities to allow us to make a robust assessment of the overall level of wholesale charges. In their Ministerial Guidance, the Scottish Ministers have confirmed that charges should be broadly reflective of the costs of providing the service. This should apply equally to the overall level of wholesale and retail charges. It is important that the overall level of wholesale charge is set at an appropriate level. If it is set too low, new entrants would benefit, but the core water and waste water treatment and network business would suffer. Ultimately this would affect the

level of service provided to customers. If the overall level of wholesale charge is set too high, there is a risk that new entrants would seek to challenge this charge under the Competition Act 1998.

Calculation of the overall level of wholesale charge draws on information collected in the regulatory accounts. This should allow Scottish Water and new entrants to understand our calculations, and should reassure both new entrants and the incumbent supplier that the wholesale charge is fair.

The regulatory accounts

The regulatory accounts were prepared on behalf of this Office by Ernst & Young LLP, supported by Black and Veatch Consulting Limited.

The outputs of the project were as follows:

- A complete set of regulatory accounting guidelines designed specifically for Scottish Water, but consistent where appropriate with those developed by Ofwat.
- A set of regulatory returns (both definitions and tables) capable of detailing all of the required information for the core business, separated into wholesale and retail activities. These returns will be fully consistent within themselves, and reconcilable in principle to the statutory accounts.
- A set of detailed guidance to auditors and Reporters, to enable them to audit regulatory account submissions effectively.
- A series of draft versions of the above, enabling Scottish Water to provide feedback which, where possible, was taken into account in developing final versions.

Ernst & Young LLP outlined in a detailed report the process they had gone through to define the core and non-core separation and the wholesale and retail separation. The report also detailed both the issues that a rose when undertaking the project and those which

Ernst & Young LLP believe may arise if an effective separation of Scottish Water is to be made in 2006. Copies of the report are available on our website at www.watercommissioner.co.uk

Review of the timeline

Our approach to this draft determination was based on a clear timeline which set out in detail:

- the dates by which Scottish Water needed to provide information;
- the points at which stakeholders could influence the Review;
- and dates when we would comment on our progress.

The timeline for the review process was originally outlined in Volume 1 of our methodology consultation, which was published in July 2004. We have published all information relating to this Review on our website (with the exception of Scottish Water's first draft business plan). This has helped to ensure that customers and stakeholders, including Scottish Water, have been kept up-to-date and fully informed about our progress in completing this Review.

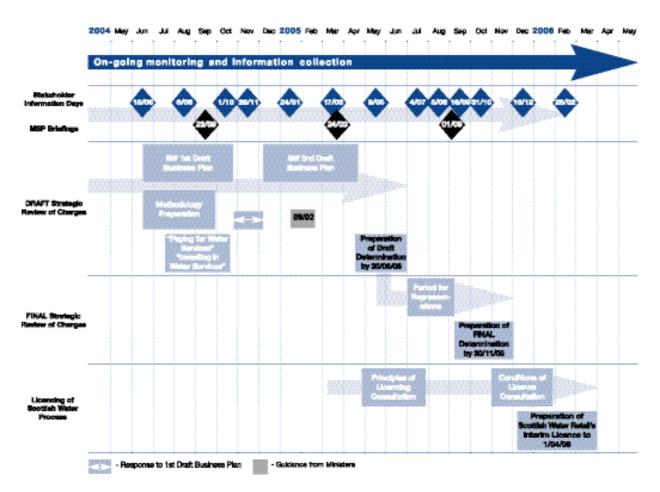


Figure 4.3: Timeline for the Strategic Review of Charges 2006-10

A critical input to the review process has been the guidance we received from the Scottish Ministers. In May 2004, Ministers provided high-level guidance which set out the principal factors that we were to consider when formulating our advice⁴⁸. In February 2005, we received the detailed Ministerial Guidance on the Scottish Executive's objectives for this Review.⁴⁹ This detailed guidance set the key customer service standards, investment and principles of charging parameters for Scottish Water.

Following publication of this draft determination, the new Water Industry Commission may receive further guidance from Ministers. This will inform the final determination in November 2005.

Business plans and guidance

Review of Scottish Water's first draft business plan

Customers and other stakeholders are entitled to expect Scottish Water to have clear, well-developed plans for the business. We asked for two draft business plans to inform our Strategic Review of Charges.

The first draft business plan represented Scottish Water's first opportunity to advise us of its strategy for the future, both in terms of investment in the infrastructure and the charges it sought to impose on its customers.

⁴⁸ This initial guidance was contained in the commissioning letter of 26 May 2004 from the Minister for Environment & Rural Development, Ross Finnie MSP, to the Commissioner.

This detailed guidance was contained in the letter of 9 February 2005 from the Deputy Minister for Environment & Rural Development, Lewis MacDonald MSP to the Commissioner.

We required Scottish Water to provide information about the level of operating and capital costs that it expected to incur. We also required Scottish Water to provide a detailed analysis of the investment programme and its impact on the level of service to customers.

We issued detailed guidance to Scottish Water on the format and content of the plan to ensure that we would receive the information necessary for us to set charge limits.

Our guidance for the first draft business plan was similar to that which Ofwat uses for the companies south of the border. However, in framing our information requirements we took full account of the Scottish context. For example, we did not consider it necessary to include a detailed asset inventory and cost base analysis.

Scottish Water submitted its first draft business plan to this Office and to the Scottish Executive on 29 October 2004. It also provided a short public summary. The structure of the business plan was consistent with the guidance.

Scottish Water also provided a separate document entitled 'Special factors'. This document highlighted the areas in which Scottish Water considered that its operating costs were necessarily higher than those incurred by other water and waste water companies against which it might be benchmarked. The special factors document sought to justify Scottish Water's view that its allowed for operating costs should be significantly higher than those predicted by direct comparisons with other water and waste water companies.

Key messages from Scottish Water's first draft business plan

The key messages from Scottish Water's first draft business plan were as follows:

 Scottish Water had sought to strike a balance between the level of charges that it would be seeking to impose on customers, the scale and pace of investment in the infrastructure and the level of a dditional borrowing that would be required from the Scottish Ministers.

- The key priorities identified by Scottish Water over the period 2006-10 were to maintain or improve existing services, reduce the risk of sewage flooding and improve drinking water quality.
- These priorities had been established after conducting independent customer research and by working closely with the Water Customer Consultation Panels.
- In order to meet these priorities, Scottish Water was proposing a substantial investment programme amounting to £2,211 million over four years. This equates to £229 per property per year in Scotland.
- This level of investment would require charge increases of 5% (in real terms) over the period 2006-10.
- The level of borrowing would also need to increase by a further £712 million.

The role of the Reporter

A key element of the Reporter's role is to scrutinise the capital investment programme proposed by Scottish Water. The Reporter audited a sample of the programme, and challenged the scope of requirements, the proposed solutions and the basis of cost estimates for specific schemes. His key findings were as follows:

- A number of elements of Scottish Water's proposed investment programme had been overcosted (such as expenditure projections on waste water treatment works and leakage reduction works).
- Scottish Water's asset inventory and other related information was not fit for purpose and further work was required to enable accurate projections to be made.
- A number of Scottish Water's costings were not supported by sufficient documentary evidence, for example the property figures for the base capital maintenance expenditure projections.

Publication of the public summary of the first draft business plan

On 3 December 2004 we issued a press release to accompany Scottish Water's publication of its summary business plan. We noted that although Scottish Water projected an increase in charges of 5% in real terms (13.6% nominal), we did not believe that such an increase was likely to be required. This view reflected our detailed analysis of Scottish Water's first draft business plan.

Scottish Water's second draft business plan

The second draft business plan was particularly important since it presented Scottish Water with an opportunity to explain the costs that it would incur in delivering the objectives set out in the February Ministerial Guidance on investment priorities. We amended the guidance for the first draft business plan to take account of new information that we felt we required but also areas where we considered the guidance needed to be more specific.

The main differences were in the following areas:

- more detailed tariff information;
- definition of retail costs;
- output performance improvements;
- · definition of Quality and Standards II overhang; and
- taxation.

In our view the key points in Scottish Water's second draft business plan were as follows:

 Scottish Water believed that the Ministers' objectives should be re-phased, since delivering them within the 2006-10 regulatory control period would lead to unacceptable charge increases. It also suggested dropping some objectives and increasing the available borrowing.

- Scottish Water had calculated the investment to meet the Ministers' essential and desirable investment objectives at £3.1 billion⁵⁰. The essential objectives were costed at £2.9 billion⁵¹ (both at 2003-04 charges). Scottish Water assessed its revenue need on the basis of just the essential investment.
- The plan stated that a charge increase of 88% in real terms between 2006 and 2010 would be required.
 The plan also stated that lower investment in 2010-14 would allow charges to fall substantially during that period.
- The investment programme in the second draft business plan differed from that contained in the first draft business plan. This reflected the Ministers' objectives for improving drinking water quality and environmental compliance.

Scottish Water sought to justify a much higher level of operating and capital costs than comparisons with other water and waste water companies would suggest was appropriate. Operating costs were forecast to increase by more than 30% in real terms.

Scottish Water also proposed the creation of a contingency fund by restricting the amount of available debt that it would borrow. This had a dual impact on charges. It increased directly the revenue (and surplus) required from customers. This in turn resulted in a higher tax charge, which further increased charges to customers. We believe that, pending the decision to establish a buffer mechanism of the sort discussed above, the interim determination and the logging up/down processes are capable of capturing variances in cost that are outside the control of management. If management cannot deliver the outputs required under the regulatory contract, it is for the Scottish Executive to take whichever steps it believes are necessary. Our view is that customers should not be asked to pay twice for the same output.

The Reporter submitted his report on the second draft business plan to us in May 2005, and we have published this on our website. In general, the Reporter raised concerns about the cost, scope and design of the

⁵⁰ Post efficiency.

⁵¹ Post efficiency

investment programme. He also highlighted concerns about the approach that had been used and the proposal to commit large sums of money without proper analysis.

In response to concerns raised by the Reporter, and our own analysis of the plan, we commissioned a more detailed review of the investment programme, including an increased number of site visits. This has helped to inform our draft determination.

Chapter 5:

Financing delivery of the investment objectives of the Scottish Ministers

Introduction

The capital programme is Scottish Water's largest single element of expenditure. In recent years, annual capital investment in Scotland has ranged from £350 million to £520 million⁵².

This chapter sets out the capital programme that is required to meet the 'essential' and 'desirable' objectives of the Scottish Ministers. It explains how we have reviewed this capital programme to ensure that it is delivered and financed at the lowest reasonable overall cost. Meeting the Ministerial objectives will require Scottish Water to deliver a larger capital programme (in terms of its cost) than has ever been delivered by companies of a similar size south of the border in any single four-year period.

It is an important principle that customers should pay for the level of service they receive. We have taken steps at this Strategic Review to ensure that the way in which capital expenditure is funded is more transparent. In this chapter we set out clearly our assessment of the funding required to finance the capital programme and explain fully how we have reached our conclusions.

Background

It is necessary to invest in water and waste water assets for the following reasons:

- To maintain the level of service to customers this
 investment is often termed capital maintenance. The
 assets of any business need to be replaced at the end
 of their useful lives if the business is to continue.
- To improve the quality of service to customers and the public – this investment is often termed capital enhancement, or quality investment. Investment in assets is necessary to meet higher environmental and quality standards.
- To respond to customers' changing demand patterns – this investment is often termed capital

enhancement, or growth investment. The capacity of the assets may need to be increased to meet both the demands of new customers and growth in usage from existing customers.

The investment programme will benefit customers, both now and in the future. However, we believe that each generation of customers should pay the full cost of the water and sewerage services it consumes.

Any business could, at least in theory, borrow in order to cover any or all of its costs. However, any borrowings will need to be repaid, with interest, from future revenues. In other words, continuing to borrow to cover current costs will mean that revenues have to increase to meet the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditure faced by the water industry, borrowing is only delaying and worsening the charge levels that future generations face. Unless revenues are brought broadly into line with the average continuing annual obligations of the water industry, there will be a continuing need to increase borrowing in order to balance the books at the end of the financial year.

The Ministerial Guidance⁵³, that we received in February 2005, recognised the importance of maintaining and, where possible, improving the financial strength of Scottish Water. By moving towards a regulatory capital value (RCV) approach to charge setting, we ensure that there will be a transparent and sustainable level of borrowing and that both current and future customers will be treated fairly.

Quality and Standards II

The Scottish Ministers establish investment priorities for the Scottish water industry through the Quality and Standards process. This process brings together a range of stakeholders to define the level and scope of investment in the water industry. Quality and Standards specifies the level of service to customers, and the environmental and water quality standards that the water industry in Scotland must deliver.

⁵² This excludes investment delivered through PPP schemes.

⁵³ See Appendices 4 and 15.

Quality and Standards II set investment priorities for the period from April 2002 to March 2006. The investment programme was summarised in 'Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-2006', which was published in August 2001. This indicated that the cost of the investment programme would be £2.34 billion (2000-01 prices).

In the Strategic Review of Charges 2002-06, we examined the scope for capital efficiency in the Quality and Standards II investment programme. We advised Ministers that efficiency savings of around £500 million were possible. Our analysis showed that Scottish Water should be able to deliver all of the required outputs for £1.81 billion. Ministers accepted this advice.

In the Strategic Review of Charges 2002-06, we forecast a rate of capital expenditure inflation (COPI)⁵⁴ of 1.5% a year. COPI has consistently continued at a higher level than we had expected and this is likely to increase the efficient cost of delivering Quality and Standards II to approximately £1.93 billion. Scottish Water is therefore required to deliver the Quality and Standards II outputs for this revised amount.

In our monitoring of the delivery of Quality and Standards II, we were concerned to verify £114 million of efficiencies that the former East of Scotland Water Authority had claimed in its development of Quality and Standards II. If the claimed efficiencies were not substantiated, customers faced higher bills because the efficiency target applied to the East of Scotland Water Authority was less challenging than it would otherwise have been⁵⁵. It became apparent that no definitive list of projects existed to substantiate East of Scotland Water Authority's efficiency claim.

We reached an agreement with Scottish Water about the efficiency claim in early 2003. Scottish Water's Board agreed that the £114 million (which equated to £80.2 million post-efficiency), should be amortised in five equal instalments of £16.04 million during the period from 2006-07 to 2010-11. We have included this agreed adjustment in the capital efficiency target in this draft determination.

Scottish Water was also tasked with delivering additional outputs that were not known when the original investment programme was established. These included:

- additional security measures;
- unbudgeted development contributions; and
- measures necessary to comply with the Dangerous Substances and Explosive Atmospheres Regulations 2002.

Scottish Water estimated that the total cost of these additional outputs is £110 million. This increased the size of the Quality and Standards II investment programme to approximately £2.04 billion⁵⁶.

Delivery of Quality and Standards II

Analysis of the investment programmes that have been delivered by the companies in England and Wales demonstrates the challenge posed in delivering the Quality and Standards II programme.

We examined the capital investment delivered, and forecast, by all of the water and sewerage companies over the 12 consecutive four-year periods from privatisation in 1989 until 2005. We have adjusted the value of each programme to a 2003-04 price base.

A comparison of the largest ever four-year programme for each of the English and Welsh companies and Quality and Standards II⁵⁷, shows that only three companies have achieved a larger four-year investment programme.

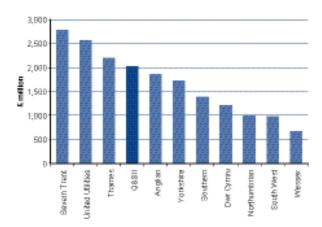
⁵⁴ COPI – Construction Output Price Index.

The overall efficiency applied to East of Scotland Water Authority was 11%, compared with 26% for North of Scotland Water Authority and 27% for West of Scotland Water Authority. See 'Strategic Review of Charges 2002-06', Table 19.12, Page 207.

⁵⁶ In outturn prices.

^{57 £2,026} million in 2003-04 prices, including an estimate for capital inflation and Scottish Water's claim for new outputs.

Figure 5.1: Largest four-year investment total for each company (1990-2005) (2003-04 prices)



Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger, while Anglian Water and Yorkshire Water are similar in size to Scottish Water. Table 5.1 shows key statistics for these companies and for Scottish Water.

Table 5.1: Key company statistics⁵⁸

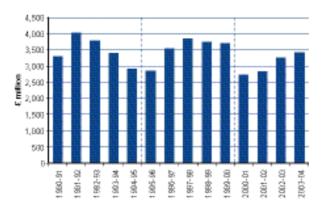
Company	WATER			SEWERAGE				
	Connected properties (millions)	Population (millions)	Length of mains (km)	Number of treatment works	Connected properties (millions)	Population (millions)	Length of sewers (km)	Number of treatment works
Thames	3.49	8.26	31,416	97	5.38	13.06	67,335	349
Severn Trent	3.30	7.31	45,949	172	3.71	8.87	54,040	1,017
United Utilities	3.13	6.69	40,741	140	3.07	6.66	40,018	599
Scottish Water	2.48	5.18	46,508	371	2.37	4.69	44,854	1,836
Yorkshire	2.12	4.66	31,217	81	2.12	4.65	30,157	614
Anglian	1.93	4.18	36,762	143	2.47	5.70	35,394	1,077

Anglian Water and YorkshireWater, the two companies of similar size to Scottish Water, have never delive red a four-year programme as large as Quality and Standards II.

In England and Wales, regulatory control periods last five years. Companies use the first part of a regulatory control period to decide how best to deliver the agreed capital programme. An analysis of total investment since 1990 shows the effect of the regulatory control period on the delivery of investment. This is illustrated in Figure 5.2.

⁵⁸ Information for 2003-04 is taken from the Ofwat June Return for the companies in England and Wales and from the WIC Annual Return for Scottish Water.

Figure 5.2: Total capital investment of the water and sewerage companies 1990-91 to 2003-04 (in 2003-04 prices, adjusted for inflation)



This analysis shows that the level of investment in the first year of each regulatory control period (1990-91, 1995-96 and 2000-01) is generally lower than in subsequent years of the period. The shorter four-year regulatory control period in Scotland therefore further increased the challenge in delivering Quality and Standards II.

Quality and Standards III

Quality and Standards III covers the period 2006-14. Detailed work in defining the required investment was completed by a number of specialist stakeholder groups, each of which had particular responsibility for a specific work package. These work packages included:

- maintenance;
- growth in the water and sewerage networks;
- environmental improvements;
- drinking water quality; and
- other important issues for customers.

Each work package identified investment 'drivers'. In most cases, the driver of a need for investment was legislation. A number of scenarios were then drawn up, ranging from 'do nothing' to 'aspirational' improvement. Scottish Water was then asked to cost the gap between the expected position at the end of Quality and Standards II and each of the identified scenarios. The specialist groups responsible for work packages produced interim reports, which were used by the Scottish Executive to inform the Quality and Standards III consultation process. It is important to highlight that only Scottish Water was involved in costing the required outputs.

Scottish Water's first draft business plan

Scottish Water submitted its first draft business plan to this Office on 29 October 2004. The plan contained its initial investment proposals. We had expected the proposals to take account of the likely investment priorities emerging from the Quality and Standards III process, Scottish Water's assumptions on any likely overhang from Quality and Standards II, and its views on the size of investment programme that could be managed efficiently

Scottish Water provided details of its proposed investment programme in an appendix to the draft business plan, Table C⁵⁹. This listed 790 projects that were planned to be completed over the Quality and Standards III period. These projects had a total value of £4,891 million⁶⁰. Scottish Water proposed to invest £2,199 million of this during the 2006-10 regulatory control period⁶¹. This equates to £550 million of investment each year and represents around £226 a year for every connected property in Scotland.

This proposed investment programme would have represented a significant delivery challenge. Figure 5.3 shows the level of investment⁶² that has been delivered each year since 1996-97.

⁵⁹ The first draft business plan, including Table C, was completed using 2005-06 prices. The second draft business plan was completed using 2003-04 prices. In order to ensure comparability throughout this chapter, we have unwound Scottish Water's inflation adjustment in the first draft business plan, and reported all investment in 2003-04 prices unless otherwise stated.

⁶⁰ Of the 790 projects listed in Table C, six had a negative value recorded against them. If these negative values were not taken into account, then the actual cost of the proposed investment programme would be £5,412 million in 2003-04 prices.

⁶¹ In the main body of the business plan, Scottish Water actually proposed to invest £2,211 million, the equivalent of £553 million for each year of the 2006-10 period, or £229 per property a year (in 2005-06 prices). This figure does not appear to be consistent with those reported in Table C. We have relied on Table C for the analysis in this section.

⁶² This is the total cash cost of investment rebased to 2003-04 prices. We have not adjusted values to take account of the relative efficiency of the Scottish water industry in each year.

Figure 5.3: Total investment by the Scottish water industry per year (2003-04 prices)

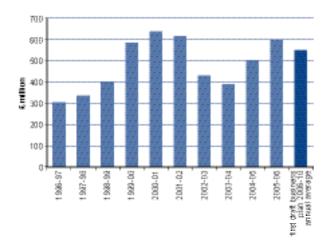
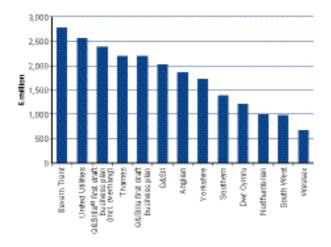


Figure 5.4 shows that the first draft business plan proposed an investment programme for the 2006-10 regulatory control period that was comparable to the biggest programme so far delivered by Thames Water.

Figure 5.4: Largest four-year investment total



Moreover, Table C did not include the expected £183 million⁶⁴ overhang from Quality and Standards II. Scottish Water therefore proposed to deliver a £2.38 billion investment programme over four years.

Scottish Water's proposed investment programme was, therefore, almost without precedent in the recent history of the water and sewerage industry in the UK. Table 5.2 shows that the largest five privatised water and sewerage companies⁶⁵ have delivered programmes of more than £2.4 billion on only four occasions.

Table 5.2: Delivery of four-year investment programmes of more than £1.1 billion by the largest five companies (1990-2005)⁶⁶

Size	Per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	3.3%
Over £2.5 billion	£625m	3	5.0%
Over £2.4 billion	£600m	4	6.7%
Over £2.3 billion	£575m	7	11.7%
Over £2.2 billion	£550m	12	20.0%
Over £2.1 billion	£525m	20	33.3%
Over £2.0 billion	£500m	24	40.0%
Over £1.9 billion	£475m	32	53.3%
Over £1.8 billion	£450m	35	58.3%
Over £1.7 billion	£425m	37	61.7%
Over £1.6 billion	£400m	41	68.3%
Over £1.5 billion	£375m	47	78.3%
Over £1.4 billion	£350m	50	83.3%
Over £1.3 billion	£325m	52	86.7%
Over £1.2 billion	£300m	56	93.3%
Over £1.1 billion	£275m	60	100%

Scottish Water's first draft business plan also contained a number of projects that did not appear to be consistent with likely Quality and Standards III priorities which have subsequently been confirmed in February's Ministerial Guidance. They were referred to in the business plan as 'investment in other service areas'. These projects accounted for around £195 million of investment.

The Reporter audited Scottish Water's first draft business plan. We were concerned by his comments about both the cost and the scope of projects in the investment programme.

In an open letter⁶⁷ to Scottish Ministers in December 2004, we noted that Scottish Water should be set challenging but achievable objectives. In this regard, we emphasised the importance of defining a capital programme of a size that could be delivered efficiently.

⁶³ Q &S IIIa: Quality and Standards III investment required in the period 2006-10.

⁶⁴ Scottish Water reported a Quality and Standards II overhang of £194 million at 2005-06 prices. This figure includes Quality and Standards II investment to be delivered after March 2006 (£154 million) and new obligations to be delivered after March 2006 (£40 million).

⁶⁵ Described in Table 5.1

The number of occasions is cumulative. That is to say there were two occasions when a programme of more than £2.6 billion was delivered and one occasion when a programme of £2.5 billion to £2.6 billion was delivered. Accordingly, there were three occasions when a programme of more than £2.5 billion was delivered.

This letter can be found on our website – www.watercommissioner.co.uk

The letter also noted that Quality and Standards II was itself a substantial investment programme and it seemed increasingly likely that a large proportion of that programme would not be delivered during the current regulatory control period. This limited the opportunity for Quality and Standards III outputs to be delivered in the 2006-10 regulatory control period.

The Ministerial Guidance⁶⁸ issued in February this year marked the completion of the Quality and Standards III process. It set out the objectives of the investment programme for Quality and Standards III. It also set out the detailed objectives for the period of the Strategic Review of Charges 2006-10.

The investment objectives in the Ministerial Guidance were divided into those that are 'essential' and those that are 'desirable'. Ministers required the Strategic Review of Charges 2006-10 to fund Scottish Water to deliver all of the essential objectives. These outputs were to be delivered irrespective of their impact on customers' bills.

Ministers also set out desirable objectives that we were required to fund provided that:

- it was reasonable to expect that they could be delivered efficiently; and
- projected charges to customers in the period to 2010 did not rise by more than the level of inflation.

Scottish Water's second draft business plan (April 2005)

In its second draft business plan, Scottish Water set out its investment plan for the period 2006-10. It provided details of the costs involved in delivering the investment objectives set out in the Ministerial Guidance.

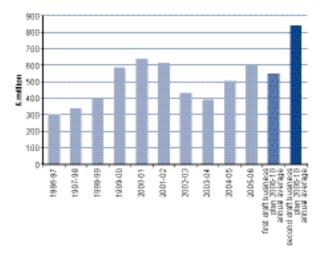
The second draft business plan suggested that the cost of delivering even the essential objectives set out in the Ministerial Guidance would lead to a significant increase in charges. Scottish Water put forward three alternative solutions to keep charges stable:

- a re-phasing of the investment objectives, with less being undertaken in 2006-10 and more in 2010-14;
- increasing the borrowing limits permitted to Scottish Water; or
- · reducing the scope of the objectives.

Scottish Water stated that it would need to invest £3.37 billion to meet the Ministers' essential and desirable objectives over the same period. Some £2.92 billion would be required to meet the Ministers' essential objectives.

Our analysis of Scottish Water's proposed investment programme confirmed that not even the essential objectives could be delivered effectively during the 2006-10 regulatory control period unless there were significant reductions in cost available either because of efficiency or because the investment programme had been overscoped. Figure 5.5 compares the total investment per year suggested by the first and second draft business plans with historic and actual spending.

Figure 5.5: Total investment per year – comparison of actual performance with first and second draft business plans (2003 - 04 prices)



We have, however, been able to identify significant cost reductions in the programme.

⁶⁸ We discussed the Ministerial Guidance in more detail in Volume 4, Chapter 14.

Transition from Quality and Standards II to Quality and Standards III

Managing overhang from one regulatory control period to the next is difficult if:

- a large proportion of the programme (either in terms of money or the number of projects) is still to be delivered at the end of the period; and/or
- resources that were made available to deliver the capital programme have been spent inefficiently.

It now appears very likely that the Quality and Standards II investment programme will not have been delivered in full by April 2006. In its second draft business plan, Scottish Water estimated the overhang at £283 million.

We initially estimated that the size of the Quality and Standards II overhang that should be funded by customers was in the range of £140 million to £180 million⁶⁹. This range was based on deducting the actual amount invested over the 2002-06 period from the total budget for Quality and Standards II. We adjusted the total budget for Quality and Standards II to take account of the unexpected effect of capital inflation in the period 2002-06. We asked Scottish Water to make any representations on this assessment by 20 May 2005.

We were not fully persuaded by Scottish Water's explanation of the need for £283 million to deliver the remainder of Quality and Standards II. Our analysis of Scottish Water's claimed allowance indicated that the £283 million included an allowance for likely inflation beyond the end of the current regulatory control period. It also seemed to include an allowance to cover inefficient delivery in the early years of Quality and Standards II. We made two adjustments to the claimed £283 million overhang.

First, we removed the effect of inflation after 31 March 2006. This ensures that customers do not fund the additional costs associated with late delivery. This reduced the overhang to £274.5 million (at 2005-06 prices).

Second, we restated the £274.5 million to 2003-04 prices to ensure that it was presented on a consistent basis with the remainder of the capital expenditure funded in this draft determination. This reduced the £274.5 million to £253.0 million.

From this claim we subtracted £54.9 million at 2003-04 prices to reflect the agreement we had reached with Scottish Water concerning the former East of Scotland Water Authority's claimed efficiencies. This produced an allowed overhang for Quality and Standards II of £198.1 million.

Reviewing the capital programme

Scottish Water's investment plan has been scrutinised in detail by the Reporter, the quality regulators⁷⁰ and this Office. The Reporter raised a number of concerns about the scope and composition of the proposed investment programme. We therefore asked two firms of engineering consultants and Ofwat to help us carry out a more detailed review of the capital programme than we had originally planned.

Figure 5.6 sets out the prices we undertook in carrying out our analysis.

⁶⁹ Letter from the Commissioner to the Chief Executive of Scottish Water, 2 May 2005.

The Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA).

Figure 5.6: Framework for assessing capital investment requirements

Ministerial Guidance on the size of the overall investment programme and the outputs required to be delivered **Fstablish** Scottish Water Investment Plan submission with initia costs, project by project, and detailed information on outputs programme Establish impact of Quality and Standards II overhang and build into baseline investment programme Reporter & regulator challenge: audit of scope of project solutions and costs SEPA and DWQR scrutiny: ensure that required outputs are programme and Further challenge and scrutiny by two consultant engineering firms and by Ofwat establish a baseline Capital maintenance Capital enhancement baseline investment baseline investment programme programme Ofwat capital maintenance Ofwat cost base econometrics and cost base relative plus allowances for efficiency additional capital maintenance to ensure continuing serviceability Ofwat targets for capita Ofwat targets for capital maintenance and scope for enhancement and scope for out-performance by out-performance by companies companies Assess scope to improve Assess degree to which Assess degree to which scope for improvement is scope for improvement is limited by size of investment limited by size of investment programme programme Determine the required level of capital expenditure and the Target maximum 'desirable' outputs that can be delivered in expenditure

Scope for capital efficiency

In determining the scope for efficiency in the delivery of capital maintenance, we have broadly followed the approach that is adopted by Ofwat for the companies in England and Wales. We have adjusted our approach to take account of the situation in Scotland. Our methodology included the following stages:

accordance with Ministerial Guidance and within an overall level

of investment spend that is consistent with efficient deliver

- An assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment was carried out using Ofwat's capital maintenance econometric models.
- An adjustment to the required level of capital maintenance expenditure to take account of any

circumstances specific to Scotland that could affect Scotlish Water's costs.

 An assessment of the scope for efficiency We used Ofwat's cost base approach to determine the scope for efficiency and have drawn on the evidence gathered by Ofwat on the scope for continuing improvement.

We are confident that our approach is robust. To verify our results, we carried out a series of high-level comparisons between our assessment for Scottish Water and the levels of capital maintenance spend in England and Wales. In these comparisons we took account of:

- the value of the asset base,
- the condition of the asset base, and
- the number and type of assets.

We used Ofwat's cost base approach to benchmark Scottish Water's efficiency in delivering capital enhancement projects. We took account of special factors relating to the industry in Scotland.

We recognise that this analysis is particularly specialised. We therefore commissioned independent consultants, Faber Maunsell, to carry out the analysis of relative efficiency. The results of their work were reviewed by SMC (Strategic Management Consultants) and by Ofwat to ensure that our approach was consistent with that which is used south of the border.

We assessed the scope for efficiency for both capital maintenance and capital enhancement at a programme level. We did not seek to review the relative efficiency of individual projects. The project costs contained in the baseline programme are therefore the pre-efficiency costs. It will be for Scottish Water to determine how these same projects will, at a programme level, be delivered within the overall post-efficiency budget.

Faber Maunsell reviewed the standard costs submitted by Scottish Water to ensure that they were consistent with Scottish Water's investment programme and

outputs

Ofwat's benchmark costs. When Faber Maunsell were satisfied with the cost information, we assessed the procurement efficiency gap for the capital investment programme contained in the second draft business plan expressed as a percentage of total investment and separated by water and sewerage, infrastructure and non-infrastructure. The capital efficiency factors that resulted from this analysis are shown in Table 5.3.

Table 5.3: Capital efficiency factors applied to the quality, growth and customer service investment for the highest estimated cost investment programme

	Cost base efficiency gap %	Reduction required to close 75% of gap (%)	Additional reduction required to match 'continuing improvement' by water companies (%) ⁷¹	Total reduction required (%)
Water				
Infrastructure	23.5%	17.6%	3.7%	20.7%
Non-infrastructure	25.7%	19.3%	3.7%	22.3%
Weighted average	25.6%	19.2%	3.7%	22.2%
Sewerage				
Infrastructure	17.2%	12.9%	4.4%	16.7%
Non-infrastructure	29.8%	22.4%	4.4%	25.8%
Weighted average	22.4%	16.8%	4.4%	20.5%
Combined				
Infrastructure	17.9%	13.4%	4.3%	17.2%
Non-infrastructure	26.9%	20.0%	3.9%	23.1%
Weighted average	24.2%	18.2%	4.0%	21.4%

In line with the approach of the Competition Commission⁷² when determining price caps for Sutton and East Surrey Water and Mid Kent Water, we have phased the efficiency challenge for Scottish Water over the first three years of the regulatory control period.

The lowest estimated scope for efficiency improvement averaged over the entire phased investment programme is 15.4%. The highest realistic efficiency gap calculated over the entire programme is 20.8%.

PPP contracts

Public Private Partnerships (PPP) play an important role in delivering waste water services to customers in Scotland. There are nine PPP contracts. Some 50% of Scotland's total waste water and 80% of Scotlish Water's sludge is processed through PPP contracts.

The nine projects are outlined in Table 5.4. This also shows the projected fee payable to each consortium.

Table 5.4: PPP contracts with Scottish Water

Project name: Company name	Contract signed	Duration years	Construction costs	Annual fee in 2003-04
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£21m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£9m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£7m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£19m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£11m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£14m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m ⁷³

^{71 &#}x27;Continuing improvement' reflects the minimum improvement that Ofwat expects the frontier company to make during the regulatory control period.

Reports on references under sections 12 and 14 of the Water Industry Act 1991, 2000. See for example, paragraph 6.148 of the report on Sutton and East Surrey Water.

⁷³ Totals do not add due to rounding.

At the last Strategic Review of Charges our analysis showed that PPP offered a more efficient option than traditional procurement and operation of the same treatment works by the three authorities. We also noted that the cost of providing the required new treatment works using the PPP route was £550 million. The authorities estimated that the cost of these works would have been £700 million using traditional procurement. The three authorities also incurred operating and capital maintenance costs that were some 40-65% higher than the average south of the border.

At the current time, the PPP contractors appear to be earning a relatively high return on their investment. In 2003-04, Scottish Water paid the PPP contractors approximately £112 million. We used Ofwat's capital maintenance and operating cost econometric models to review the likely capital maintenance and operating costs. The models suggest that capital maintenance costs at average efficiency would amount to around £20 million.

The Ofwat operating cost models suggest that operating costs at average efficiency would amount to approximately £35 million⁷⁴.

The remaining £57 million of the annual charge could be attributed to financing costs.

If 90% of the initial capital costs were funded through debt and 10% through equity, then we estimate that the annual interest and principal repayment costs would be approximately £43 million⁷⁵. This would leave £13 million as a return for the equity invested in the project by the PPP contractors. This would imply an equity return of below 20% 76.

To an extent this equity return can be justified by the risk that the PPP contractors took in agreeing to build the treatment works for a much lower cost than the three authorities. The risks that the contractors absorbed include:

- meeting required standards;
- cost overruns during construction if a project or site is not delivered on time or to budget, the contractor incurs the associated costs; and
- timely completion the contractor is paid only when the assets are fully operational.

PPP contracts are complex and typically operate over an extended period. If there is significant initial capital expenditure the risk to the contractor is likely to be greater in the early part of the contract. The cost of borrowing will reflect this extra risk.

Although all of the PPP contracts are now operational, we are not aware of any attempt to refinance these contracts. We would hope that it may be possible for customers to share the benefits of a possible refinancing of the projects since construction risks have been managed and the cost of capital also appears to be lower than it was when these contracts we re originally let.

In its second draft business plan, Scottish Water identified a total investment requirement of some £66 million (2003-04 prices) at three PPP waste water treatment sites. This investment appears to relate to odour and unsatisfactory discharges.

The total operating costs associated with this investment were £1.4 million (2003-04 prices) a year.

We have reviewed the proposed new investment at the PPP sites and have reduced this investment to reflect the opportunity for efficiency. We have also reduced the scope of what is required to reflect the advice that we have had from the Reporter and our more detailed review of the capital programme.

We have calculated an appropriate annual PPP operating cost. This is set out in Table 5.5.

⁷⁴ This figure comprises all operating costs, including charges paid to SEPA and local authority rates, where appropriate.

⁷⁵ This is based on a fixed annual percentage interest rate of 7.5%, with 27 equal payments made at the end of each year of the concession. The initial capital cost is assumed to be £550 million.

This is the internal rate of return on the assumption that the interest charges are fixed and the operating costs and capital maintenance costs are at average efficiency. We have assumed that the equity and debt were committed two years before the treatment works were fully operational. We have also assumed that Scottish Water made a payment equal to the PPP contractors' interest and principal repayment cost in the year before full operation.

Table 5.5: Allowed for additional PPP costs 2006-10

	2006-07	2007-08	2008-09	2009-10
Additional PPP costs ⁷⁷	£1.0m	£1.0m	£3.2m	£7.0m

Setting the allowed level of capital maintenance

Of wat uses econometric modelling in its assessment of the relative efficiency of the capital maintenance expenditure of the water and sewerage companies in England and Wales. This method uses statistical analysis to establish relationships between the capital maintenance expenditure made by companies and a number of factors that might drive costs which are common to all companies. Once the relationships have been established, the models can be used to predict the appropriate level of expenditure for each company. This predicted expenditure can then be compared directly with the companies' actual expenditure Inform ation to allow this comparison is collected from each company in a systematic manner.

The capital maintenance econometric models that are used by Ofwat were first used for its 1999 price review and were published in April 1998⁷⁸. In 2003, Ofwat conducted a detailed review of the models, in consultation with industry representatives, in preparation for its 2004 price review. In the review, Ofwat worked with Professor Mark Stewart from the University of Warwick, who provided an independent verification of the models. Ofwat published the final form of the capital maintenance econometric models for the 2004 price review in January 2005⁷⁹.

Each of the nine capital maintenance models includes a relationship between the capital maintenance expenditure reported by the companies and the factors that might drive costs. These factors must have a clear impact on costs but should also be as far outside the control of the management of the company as possible.

The factors that might drive costs that are used within the econometric models are known as explanatory factors. The models themselves take different forms. These are summarised in Table 5.6.

Table 5.6: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Unit cost	Total connected properties
Water distribution infrastructure	Log linear	Length of main; total connected properties
Water distribution non-infrastructure	Log linear	Pumping station capacity; water service reservoir and water tower storage capacity
Water management and general	Log linear	Billed properties; proportion of billed properties that are non-household
Sewerage infrastructure	Log linear	Length of sewer; number of combined sewer overflows; proportion of critical sewers
Sewerage non-infrastructure	Unit cost	Number of pumping stations
Sewage treatment	Log linear	Total load; total number of works
Sludge treatment and disposal	Unit cost	Total weight of dry solids
Sewerage management and general	Unit cost	Billed properties

In assessing Scottish Water's capital maintenance requirements in 2006-10 we broadly followed the four-stage process that Ofwat used in its 2004 price review⁸⁰:

 Stage A Maintaining serviceability to customers to date.

We have made an assessment of the level of expenditure required to maintain current serviceability of Scottish Water's assets. In the approach used by Ofwat, this stage takes into account evidence of historic levels of capital maintenance expenditure, current serviceability and asset performance information. For our assessment of Scottish Water's proposals, we have not been able to rely on information on historic expenditure, serviceability measures or asset performance. This is because the inform ation available is not adequately robust to use in the manner that Ofwat's approach demands. We have therefore used an alternative approach based on the capital maintenance econometric models developed by Ofwat. We have used these models to derive the future expenditure we consider is appropriate at Stage A.

⁷⁷ Based on outturn prices, assumes enhancement investment is fully operational in Quarter 4 of 2008-09.

⁷⁸ Assessing the scope for future improvements in water company efficiency: a technical paper', Ofwat, 30 April 1998.

^{&#}x27;Water and sewerage service unit costs and relative efficiency 2003-04 report', Ofwat, January 2005.

Ofwat's approach is described in the publications 'Maintaining water and sewerage systems in England and Wales: Our proposed approach for the 2004 periodic review' (May 2002) and 'Setting the price limits for 2005-10: Framework and approach – a consultation paper' (October 2002).

Stage B Is the future period different?

This stage examines the forward-looking element of capital maintenance expenditure. In essence this step considers how much more (or less) capital maintenance expenditure (compared with the Stage A assumptions) should be required in the future due to changes (in for instance the rate of deterioration of assets, or changes in other risks due to service failure) that have occurred, are occurring or are likely to occur. In the December 2004 determination, Ofwat used an assessment based on the principles set out in the UK Water Industry Research (UKWIR) common framework and we have assessed Scottish Water's proposals in a similar manner.⁸¹

Stage C Scope for improvements in efficiency.

Ofwat derives efficiency targets in Stage C that generally reduce the expenditure assumptions for price limits. As we have used an alternative methodology to derive the amount of expenditure at Stage A, we have also used a different approach in Stage C. We have, however, used Ofwat's cost base methodology to underpin our assumptions. We have assessed by how much Scottish Water can improve its efficiency in capital maintenance over the four year period.

• Stage D Impact of the improvement programme.

This stage takes into account the overlaps between the improvement programme and the base capital maintenance programme.

From our analysis we have drawn the following conclusions:

- Scottish Water's knowledge of the condition and performance of its assets is poor and it does not allow a sound, risk-based approach to capital maintenance planning to be adopted.
- Scottish Water is not adopting best practice under the principles of the Capital Maintenance Planning Common Framework (CMPCF).

 Synergies between the capital maintenance and quality programmes and between the capital maintenance programme and operating expenditure are not understood.

We set out the estimated required level of annual capital maintenance for Scottish Water in Table 5.7. We report our results for infrastructure and above-ground assets separately for the water and sewerage services. The four - year total may not add exactly due to rounding.

Table 5.7: Scottish Water's assessed capital maintenance requirements using Ofwat's models

	Water service	Sewerage service	Combined total	Four year total
Infrastructure assets	£29.3m	£24.1m	£53.4m	£213.6m
Above-ground assets	£50.0m	£43.0m	£93.0m	£372.0m
Service total	£79.3m	£67.1m	£146.4m	£585.5m

These results reflect the average level of efficiency in England and Wales in 2003-04. The best performing company incurred capital maintenance costs that were a round 8% lower than those predicted by the econometric models.

We have allowed seven exceptional items.

Exceptional item 1 Contingency to address public health concerns - up to £20 million.

Exceptional item 2 Contingency to address environmental concerns - up to £20 million.

Exceptional item 3 To achieve CMPCF 'best practice' - up to £15 million.

Exceptional item 4 To achieve progress towards economic levels of leakage - up to £40 million.

Exceptional item 5 Transfer from quality investment programme, to meet iron and manganese drivers -£17.5 million (£22 million transferred, less efficiencies).

Exceptional item 6 Metering - up to £12 million.

Exceptional item 7 Quality programme - up to £20 million.

⁸¹ Capital Maintenance Planning: A Common Framework, UKWIR/Tynemarch Associates, May 2002.

We also reallocated £0.7 million per year (£2.8 million over the period 2006-10) to operating costs to reflect Scottish Water's cost allocation practice for its central laboratory. We made a corresponding special factor allowance in operating costs.

Our view is that Scottish Water should not commit the resources made available to reduce leakage until it has agreed its economic level of leakage with the new Water Industry Commission. It should also agree with SEPA the priority areas for leakage reduction consistent with its economic level of leakage.

We have set a range for the allowed level of capital maintenance in this draft determination. Our final allowance for capital maintenance can only be determined once Scottish Water has had the opportunity to make representations on the draft determination.

In this draft determination we believe that the maximum level of capital maintenance should be £780 million. The lower end of our proposed range for the allowed level of capital maintenance is £647 million. Even this lower allowed level of capital maintenance is higher than an average company south of the border (in receipt of an upward adjustment for its use of the CMPCF) is likely to have required for an equivalent asset base. This compares with Scottish Water's estimated capital maintenance of more than £1 billion.

Financing the quality, growth and customer service investment necessary to meet ministerial objectives

The technical review of the programme by the Reporter and Faber Maunsell highlighted a number of issues in relation to Scottish Water's proposed investment programme. These included:

- duplication of project lines in the programme;
- inclusion of projects that did not meet Ministerial objectives;

- inclusion of investment targeted at PPP schemes;
- · a lack of a strategic approach in a number of areas;
- over-scoping of project solutions;
- over-reliance on the use of generic costing approaches; and
- duplication of outputs that were already required in Quality and Standards II.

Similarly, analysis of Scottish Water's project costs by both Ofwat and this Office indicated that, in certain areas of the programme, the costs per scheme proposed by Scottish Water significantly exceeded the costs put forward to Ofwat by the companies in England and Wales at the 2004 price review. There was also evidence that the costs per scheme in certain areas were significantly higher than the outturn costs for similar schemes in the current Quality and Standards II programme.

In the following sections we discuss the rationale for the changes we have made in more detail. It is important to note that we have not reduced, delayed or otherwise amended the outputs required by Ministers. For each area of the programme we have estimated the highest level of spending (pre-efficiency) that we consider to be appropriate. We also set the lowest level of investment that we believe, realistically, could be required.

Review of planned investment in drinking water quality

Scottish Water estimated that £1,064 million of investment is required to meet the Ministers' objectives for improvements to drinking water quality during the 2006-10 regulatory control period. This implied an investment of £266 million a year, or around £113 each year for every connected customer. In comparison, the total investment in England and Wales in the period 2005-10 is £425 82 million a year, or around £18 each year per customer.

⁸² This figure is from Ofwat's final determination of water and sewerage charges 2005-10. It has been inflated by 5.46% to represent capital goods inflation between 2002-03 and 2003-04.

Water treatment works

Table C includes investment in improved drinking water quality at 239 of the 371 water treatment works in Scotland⁸³. At a total cost of £831 million, this comprises more than 80% of the total investment in improvements in drinking water quality. This cost is around one-third higher than the cost in England and Wales to upgrade 239 works (where the average size of works is considerably larger).

The Reporter carried out site visits at a random sample of eight water treatment works. Faber Maunsell selected a further 36⁸⁴ water treatment works for site visits. They visited a representative range of works by size and by level of proposed investment. They also carried out desk top analysis of a further five sites.

This review indicated that there is considerable evidence that the investment required to meet the ministerial objectives had been scoped incorrectly. In particular, the use of generic solutions to establish investment needs at the smaller water treatment works appears to have led to a significant overestimate of the scope of the work required. Lack of strategic solutions also appears to have resulted in increased costs.

The Reporter concluded that the issues identified in relation to project scoping at water treatment works resulted in Scottish Water's cost estimates being around 15% too high. This was based on the limited sample of eight sites, which were reviewed in detail.

The analysis carried out by Faber Maunsell concluded that there were significant issues concerning Scottish Water's methodology for assessing the scope of work required at water treatment works. For example, when assessing 'need' Faber Maunsell discovered sites in the representative sample where there was no clear requirement to carry out the proposed works. Examples included sites where it was proposed to fit a new membrane treatment plant where one already existed at the site.

Faber Maunsell also identified a number of sites where strategic solutions, such as rationalising the number of water treatment works, had not been given proper consideration.

Faber Maunsell also found that the use of generic solutions in the costing process had led to major over-scoping of requirements. Examples included costings for installing contact tanks where Scottish Water had costed new tanks of the total required volume, rather than adding additional volume to the existing tanks.

From their analysis, Faber Maunsell concluded that the degree of over-scoping in Scottish Water's proposals for water treatment works justified a pre-efficiency reduction in costs of between 45% and 55%.

We have reviewed the Reporter's and Faber Maunsell's findings in detail. We have concluded that there is significant opportunity to reduce the scope of investment at water treatment works. Our assessment is that this reduction lies within the range of 30% to 50% of Scottish Water's estimate. This would reduce the pre-efficiency total cost of the quality investment at water treatment works from £831 million to a highest estimated cost of £582 million and a current lowest realistic cost of £415 million.

Water resources

The Reporter and our engineering consultants have assessed Scottish Water's proposed investment of £135 million on water resources. This is primarily associated with the Water Framework Directive⁸⁵. They both concluded that costs in this area are very uncertain.

The Reporter commented that Scottish Water did not appear to have taken full account of the benefits available from reducing leakage.

The engineering consultants commented that further investigations (including the development of a water resources plan) are required to reduce uncertainties and that reducing leakage should be the preferred first choice for replacing lost supplies. They recommend that Scottish Water should establish economic levels of leakage in the water resource zones that are affected by the Water Framework Directive.

⁸³ Scottish Water's second draft business plan includes proposals to reduce the number of operational water treatment works to 301 by 2009-10.

⁸⁴ In total, Faber Maunsell completed 37 site visits. However, oen of these sited was also visited by the Reporter.

The Water Framework Directive element of the water resources expenditure amounts to around £134 million.

The remaining £0.9 million relates to flood studies to comply with the Reservoirs Act.

Based on the conclusions of the Reporter and of Faber Maunsell, we have set a range of between £94.3 million and £68 million for investment in water resources.

Security enhancement

The Reporter reviewed Scottish Water's proposed investment of £76 million for security enhancement at water treatment works and other assets. He concluded that Scottish Water's estimates of the required scope of work appeared to be conservative in a number of areas. He has also suggested that the unit costs used in its assessment appear high.

We have concluded that a reduction of 20% in Scottish Water's assessment of the costs for security enhancement is appropriate.

We have not made any other adjustments to the scope of Scottish Water's proposals for drinking water quality investment. The outcome of our review of the scope of the work required to meet the Ministers' objectives for drinking water quality is shown in Table 5.8.

Table 5.8: Outcome of our assessment of drinking water quality investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost total 2006-10	Highest estimated cost	Current lowest realistic cost
Water treatment works	£830.8m	£581.6m	£415.4m
Water mains rehabilitation (DW5 iron and manganese)	£22.2m	£0.0m	£0.0m
Water resources (Water Framework Directive)	£134.7m	£94.3m	£67.8m
Security enhancement at water treatment sites	£76.4m	£61.1m	£61.1m
Customer requested lead pipe removal	£20.7m	£20.7m	£20.7m
Other minor elements	£30.2m	£30.2m	£30.2m
Scottish Water reduction for 'Programme overlap'	-£51.2m	-£35.9m	-£25.6m
Total 2006-10	£1063.7m	£752.0m	£569.6m

Review of planned investment in environmental objectives

Unsatisfactory intermittent discharges

The Reporter's review of Scottish Water's proposed investment in unsatisfactory intermittent discharges

(UIDs) indicated a number of significant concerns relating to the scoping and costing of the programme. These included:

- the use of a generic approach to develop solutions, with no allowance for the possible development of integrated catchment solutions;
- insufficient modelling work being carried out accurately to size the required solution – this was particularly the case for the three major catchments that impact on the programme for the 2006-10 regulatory control period;
- a particular concern regarding the algorithm that was used to generate storage volumes for combined sewer overflows (CSOs) that impact on bathing and shellfish waters;
- · high unit costs for schemes;
- concerns about the assessment of interconnecting pipework costs; and
- concerns about the percentage of on-costs applied to the UID programme.

The Faber Maunsell team agreed that the proposed investment raised a number of issues. Examples of over-scoping of requirements included the following:

- The proposed solution for one UID project with an estimated cost of over £10 million was to fit a 1,120m³ storm tank and screen. Faber Maunsell concluded that the scheme as presented did not require a storage solution.
- An allowance at every site for a 50metre x 4.5metre access road and hard standing of 25m². In many cases the sites are on or adjacent to existing sites and roads.
- An assessed cost of £2.4 million for a storage volume of 70m³, equivalent to a standard double ga rage.

Faber Maunsell concluded that the extent of overscoping in the programme was sufficient to justify a reduction in the estimated costs of 58%. Scottish Water is also fixing many UIDs during Quality and Standards II. A review of the Quality and Standards II baseline investment programme would suggest that a current adjusted unit cost of £0.42 million would be appropriate. In England and Wales, the average preefficiency cost of 'AMP4⁸⁶' UID schemes in company submissions was £0.45 million⁸⁷. This would give a total programme cost of £126 million⁸⁸. The highest realistic cost would appear to be around £252 million⁸⁹.

We have accepted the Reporter's overall views on other aspects of the environmental quality programme. Our conclusions are shown in Table 5.9.

Table 5.9: Outcome of our assessment of environmental quality investment requirements (pre-efficiency)

Sub-categories	Adjusted Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost
Unsatisfactory Intermittent Discharges	£601.0m	£252.4m	£126.0m
Study work		£6.0m	£6.0m
UID sub-total		£258.4m	£132.0m
Sewage treatment work upgrade	£99.9m	£99.9m	£99.9m
Septic tank upgrade	£12.0m	£12.0m	£12.0m
IPPC ⁹⁰ schemes	£9.4m	£9.4m	£9.4m
Landfill Directive	£3.5m	£3.5m	£3.5m
Other minor programme elements	£3.6m	£3.6m	£3.6m
Total 2006-10	£729.3m	£386.8m	£260.4m

Review of planned investment on development constraints and first time connection

Scottish Water's second draft business plan proposes investment of £221 million to meet demand for new network capacity from new housing and businesses. It also proposes £70 million for the first time connection of existing properties to the public water and waste water networks. Part 3 costs relate to the costs of connections to the water or sewer mains. Part 4 costs relate to the costs of connections to the trunk mains and treatment

works. This was discussed in detail in Volume 3 of our methodology. This is shown in Table 5.10.

Table 5.10: Breakdown of Table C development constraint and first time connection investment

Sub-categories	Project cost totals 2006-10
Development constraints 'Part 3'	£66.9m
Development constraints 'Part 4'	£144.0m
Development constraints water resources	£10.4m
Total development constraints ⁹¹	£221.4m
First time provision 'Part 3'	£40.2m
First time provision 'Part 4'	£29.9m
Total first time provision ⁹²	£70.0m

Development constraints

The Reporter and our engineering consultants conducted a detailed review of the methodology employed by Scottish Water to estimate the investment required to release development constraints. They raised several concerns including:

- assumptions on leakage;
- assumptions on demand; and
- the overall methodology that Scottish Water had employed.

Based on our own analysis and the comments provided by the Reporter and our independent engineering consultants, we consider that the allowance for Part 4 costs for both water and waste water, and for water resources, should be reduced by between 15% and 25%. Part 3 costs can also be reduced significantly. We believe that Scottish Water should have used a higher discount rate and taken account of likely infrastructure charges in estimating Part 3 costs. These changes give a highest estimated cost for development constraints (pre-efficiency) of £193 million and a current lowest realistic cost of £170 million ⁹³.

⁸⁶ AMP4 is the investment programme in England and Wales for 2005-10.

⁸⁷ Inflated to 2003-04 prices.

After removal of duplications and PPP works, and assuming 280 UID schemes.

Based on the assessed reduction of 58% of the total UID programme cost, after the removal of duplications and PPP works.

⁹⁰ IPPC – Integrated Pollution Prevention and Control.

⁹¹ Totals do not add due to rounding.

⁹² Totals do not add due to rounding

⁹³ Both costs include a £30 million contribution from connecting customers through the infrastructure charge.

First time provision

We have reviewed the comments of the Reporter and of our independent engineering consultants concerning Scottish Water's proposed investment for first time provision of water and waste water services to existing houses.

We have noted similar concerns to those expressed for development constraints above. We have also reduced the investment required for Part 4 constraints by between 15% and 25%, consistent with our approach for development constraints and for the same reasons. We note, however, that first time provision for water does not appear to form part of the Ministerial Guidance of February 2005. We will therefore require confirmation from Scottish Water that this investment is required to meet the Ministers' objectives.

The highest estimated cost for first time provision then becomes £62 million and the current lowest realistic cost £55 million⁹⁴.

A summary of our assessment of the pre-efficiency baseline investment programme for expenditure on development constraints and first time provision is shown in Table 5.11.

Table 5.11: Outcome of our assessment of development constraints and first time connections investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost	Contribution from connecting customers (infrastructure charge)	Highest estimated cost - contribution from customer base	Currrent lowest realistic cost - contribution from customer base
Development constraints 'Part 3'	£66.9m	£61.4m	£54.0m	£30.0m	£31.4m	£24.0m
Development constraints 'Part 4'	£144.0m	£122.4m	£108.0m	£0.0m	£122.4m	£108.0m
Development constraints water resources	£10.4m	£8.9m	£7.8m	£0.0m	£8.9m	£7.8m
Total development constraints	£221.4m	£192.7m	£169.9m	£30.0m	£162.7m	£139.9m
First time provision 'Part 3'	£40.2m	£36.9m	£32.4m	£10.0m	£26.9m	£22.5m
First time provision 'Part 4'	£29.9m	£25.4m	£22.4m	£0.0m	£25.4m	£22.4m
Total first time provision	£70.0m	£62.2m	£54.8m	£10.0m	£52.3m	£44.9m
Total for growth investment	£291.4m	£254.9m	£224.7m	£40.0m	£214.9m	£184.7m

⁹⁴ Both costs include a £10 million contribution from connecting customers through the infrastructure charge.

Customer service

We have accepted the pre-efficiency costings in this area. We have also added £15 million (pre-efficiency) to cover the costs of establishing the competition framework.

Summary

A summary of the changes to the baseline investment programme resulting from our review process is shown in Table 5.12.

Table 5.12: Summary of the proposed changes to the baseline investment programme

Investment category	Project cost totals 2006-10		
Drinking water quality	£1063.7m	£752.0m	£569.6m
Environmental	£845.2m	£386.8m	£260.4m
Customer service + initial retail investment	£84.1m	£98.4m	£98.4m
Growth*(contribution from the customer base)	£291.4m	£214.9m	£184.7m
Total 2006-10	£2,284.4m	£1,452.2m	£1,113.1m

Allowed level of capital expenditure

We have applied the cost base efficiencies to the programme in Table 5.12. The resulting post-efficiency investment profile, including the capital maintenance element, is shown in Table 5.13. The totals may not add exactly due to rounding.

Table 5.13: Allowed level of c apital expenditure 2006-10

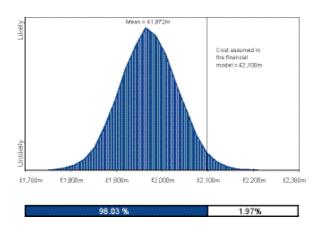
	2006-07	2007-08	2008-09	2009-10	Total
Draft determination					
Capital maintenance, current lowest realistic	£90.9m	£171.1m	£187.3m	£197.6m	£646.9m
Capital maintenance, highest estimated	£109.6m	£206.3m	£225.9m	£238.3m	£780.0m
Water quality, current lowest realistic	£63.4m	£119.3m	£130.6m	£137.8m	£451.1m
Water quality, highest estimated	£89.4m	£168.3m	£184.2m	£194.3m	£636.2m
Waste water quality, current lowest realistic	£29.0m	£54.5m	£59.7m	£63.0m	£206.2m
Waste water quality, highest estimated	£46.0m	£86.5m	£94.8m	£99.9m	£327.2m
Customer service, current lowest realistic	£9.3m	£17.5m	£19.1m	£20.2m	£66.1m
Customer service, highest estimated	£9.9m	£18.7m	£20.4m	£21.6m	£70.6m
Growth, current lowest realistic	£21.9m	£41.2m	£45.2m	£47.6m	£156.0m
Growth, highest estimated	£26.8m	£50.5m	£55.3m	£58.3m	£190.8m
Introduction to competition, lowest estimated	£8.5m	£2.4m	£0.5m	£0.5m	£11.9m
Introduction to competition, highest estimated	£9.1m	£2.6m	£0.5m	£0.5m	£12.7m
Total Quality and Standards III, current lowest realistic	£222.9m	£406.1m	£442.4m	£466.7m	£1,538.2m
Total Quality and Standards III, highest estimated	£290.8m	£532.8m	£581.1m	£612.9m	£2,017.5m
Overhang from Quality and Standards II	£224.6m	£28.4m	£0.0m	£0.0m	£253.0m
ESWA unsubstantiated efficiency adjustment	-£14.4m	-£13.9m	-£13.5m	-£13.1m	-£54.9m
Grand total, current lowest realistic	£433.2m	£420.6m	£428.9m	£453.5m	£1,736.2m
Grand total, highest estimated	£501.0m	£547.3m	£567.5m	£599.8m	£2,215.6m

Assessment of the level of investment included in the financial model

In setting a level of capital investment for the financial model we have taken account of the scope for efficiency and the range of investment we consider could be required. We examined each category of capital investment where we had identified a range of possible costs. We assumed that there was only a 5% chance of costs being lower than the minimum values that we identified, and a 5% chance of costs being higher than the maximum values.

We carried out a risk analysis that combined the ranges that we had estimated. The result of this analysis was a probability distribution for the cost of the entire capital programme. Figure 5.7 shows the results of our risk analysis.

Figure 5.7: Results of risk analysis on capital investment costs 2006-10



This analysis suggested that, given the ranges we described above, there is less than a 2% chance that the required capital programme will exceed our estimate of £2,100 million (2003-04 prices). This includes Scottish Water's full claim for the Quality and Standards II overhang⁹⁵. We have also taken account of the unsubstantiated claim for capital expenditure efficiency made by the former East of Scotland Water Authority in 2001⁹⁶.

⁹⁵ Adjusted only for inflation in the next regulatory control period. It would not, in our view, be reasonable to ask customers to pay more because of the late delivery of the Quality and Standards II investment programme.

⁹⁶ See background in Chapter 6 of Volume 5.

Our reviewwill ensure that customers can benefit from the objectives set out in the Ministers' Guidance of February 2005 at the lowest reasonable overall cost. It may be that a further reduction in Scottish Water's proposed capital programme will be warranted after our review of the investment programme has been completed.

Infrastructure renewals charge

Infrastructure assets are generally underground assets with long useful lives. These lives, however, tend to be difficult to assess accurately The rate of wear will vary with a range of factors such as construction method, choice of material, soil type, climate and usage. This makes it difficult to assess the annual cost of use of the infrastructure

The underground network will never be replaced in its entirety. Instead, sections are renewed when their condition and performance deteriorates to the point where it is cost-effective to replace them (reducing repair costs, for example) or it is necessary to replace them in order to maintain customer service levels (to reduce interruptions, for example).

We analysed the infrastructure renewals charges of the companies south of the border relative to the assets and customers served. This analysis would suggest that the total infrastructure renewals charge (IRC) for Scottish Water in 2003-04 should have been in the range £45 million to £75 million. Its actual IRC in 2003-04 was £143 million.

If we assume that the 22% increase⁹⁷ in maintenance that is allowed by Ofwat applies equally to both infrastructure and non-infrastructure assets, then we may expect an IRC of a round £55 million to £90 million in 2003-04 prices. If outturn infl ation is 2.5%, this would suggest that by 2009-10 the IRC could be as high as £65 million to £105 million.

Based on this evidence, we have allowed Scottish Water an IRC of £79 million per year in 2003-04 prices (£86 million in 2005-06 prices).

Depreciation

Depreciation is the mechanism by which we recognise that the effectiveness and value of assets declines over time. This is a cost that should be borne by customers as they receive the benefit from use of the assets.

Establishing the appropriate depreciation charge for an asset involves three critical elements:

- · estimating the asset's useful life,
- the choice of depreciation method, and
- valuing the asset.

Our approach to calculating Scottish Water's depreciation charge is consistent with Ofwat's approach in England and Wales. In this draft determination, therefore, our approach to calculating depreciation:

- uses Ofwat's five-step classification of asset life, ranging from very short to long;
- establishes the economic value of the asset on the basis of a modern equivalent asset valuation; and
- assumes straight-line depreciation over the life of the asset.

We have added the ongoing depreciation charge on existing assets to the depreciation charge on new assets that are expected to be added during this regulatory control period. This is set out in Table 5.14.

Table 5.14: Total depreciation charge 2006-10

Annual depreciation (outtumprices)	2006-07	2007-08	2008-09	2009-10
Very short	£16.6m	£23.1m	£23.4m	£24.0m
Short	£58.7m	£66.2m	£74.7m	£84.0m
Medium	£59.3m	£64.5m	£70.2m	£76.3m
Medium long	£8.4m	£9.7m	£11.1m	£12.7m
Long	£44.1m	£47.7 m	£51.3m	£55.3m
Total	£187.2m	£211.2m	£230.7m	£252.3m

Corporation tax

Scottish Water has not yet had to pay any significant amounts of corporation tax. This reflects accumulated losses inherited from the three predecessor authorities.

⁹⁷ This is the average increase in capital maintenance investment allowed by Ofwat in its 2004 price review following its assessment of companies' application of CMPCF.

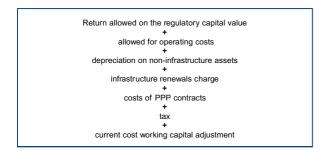
Changes to accounting rules are likely to increase the tax paid by the water industry both north and south of the border. We have decided to take a conservative approach in our calculation of the potential tax liability (i.e. the highest realistic estimate of the tax payable) that will be faced by Scottish Water. This reflects a clear concern of customers that charges should be as predictable as possible.

Introducing the RCV method of charge setting

Our move towards the RCV method of charge setting at this draft determination will have no material impact on the charges faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure.

Under the RCV method of charge setting, the revenue that Scottish Water should be allowed is calculated as set out in Figure 5.8.

Figure 5.8: The calculation of revenue



Scottish Water will receive an appropriate rate of return on its RCV. The RCV is a proxy for the current value in use of Scottish Water's above-ground asset base. This value will change over time to reflect the ageing (use) of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets. The current below-ground assets (infrastructure) are considered to be assets that are required in perpetuity and are therefore not included in the RCV. The cost of maintaining and replacing infrastructure assets is met through the annual infrastructure renewals charge.

The level of the RCV does not, by itself, impact on the charges that customers pay. It is the cash return allowed

on the RCV that determines the level of charges. The second element of the calculation of the allowed return on the RCV is the rate of return.

We multiply the rate of return by the RCV (adjusted in future years to reflect investment, depreciation and inflation) to establish the cash return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

Moving towards the RCV approach to charge setting has several key benefits. Firstly, it should provide a basis for incentives for management that will be transparent, published in advance and objectively measurable. A further benefit of our RCV approach is that it allows us to compare financial ratios on a like-for-like basis with other regulated utilities, so providing a better indication of financial sustainability.

In the longer term, an important feature of the RCV method of charge setting is that it does not require the regulator to determine how much Scottish Water should seek to borrow or how much the Scottish Executive should seek to lend⁹⁸.

The allowed rate of return

The allowed rate of return is the rate of return that we believe Scottish Water requires in order to meet the objectives that have been set by the Scottish Ministers. Our role is to set maximum charges which are consistent with delivery of these objectives at the lowest reasonable overall cost.

We have sought a balance between current and future customers by ensuring that the allowed rate of return is only just high enough to cover the costs of the benefits provided to current customers.

As a public corporation, Scottish Water has only two sources of funds: revenue from customers and new debt. Scottish Water does not borrow directly from the capital markets, nor does it borrow at commercial rates. Scottish Water borrows from the Scottish Consolidated Fund at public sector borrowing rates.

⁹⁸ See Chapter 19 of Volume 5 for more detail of how we set the initial RCV.

Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers.

We have decided to apply a modified version of the weighted average cost of capital (WACC) approach that is used by the regulators of private sector companies. We have combined an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return⁹⁹.

The future real rate of interest on debt for Scottish Water was estimated by looking at an average of current borrowing rates faced by Scottish Water. We concluded that a nominal pre-tax cost of debt of 4.6% was reasonable.

We have also, however, made an allowance for the full cost of embedded debt¹⁰⁰.

We have set the pre-tax allowed rate of return on the customer retained earnings at the post-tax allowed rate of return for debt. We believe that it is appropriate for customers to finance a relatively low return on the customer retained earnings. There is consequently no incentive for Scottish Water to seek to change its current ratio of debt to its regulatory capital value.

The allowed rate of return on customer retained earnings is 3.22%¹⁰¹.

How we set the initial RCV

We believe that a variant of the comparator approach to setting the initial RCV is the most appropriate. This approach is consistent with that which Ofwat used to set the RCV of the water only companies.

We have set the initial RCV such that if Scottish Water meets the terms of its regulatory contract, it will be in a financially sustainable position by the end of the regulatory control period. In other words, the cash allowed rate of return in 2009-10 (given the allowed levels of operating cost, capital expenditure and depreciation) is sufficient to ensure that all of the targeted cash-based financial ratios are met at the end of the regulatory control period. We then used the comparator method to assess the reasonableness of this initial regulatory capital value.

Our calculation of the initial RCV is shown in Table 5.15. We have adjusted the average RCV in 2006-07. This reflects investment during 2006-07 and the reduction in the RCV that we included to compensate customers for the overhang from Quality and Standards II¹⁰².

Table 5.15: Calculation of the initial RCV (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
New investment	£534.3m	£593.0m	£633.3m	£689.5m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

An initial RCV of £3,794.3 million (£3,519.8 million plus £274.5 million 103) is consistent with achieving financial sustainability.

We chose to use the water and sewerage companies in England and Wales as the comparators. We did not use the water only companies because they do not provide a reasonable comparator with the scope of activities that is undertaken by Scottish Water. This confirmed the reasonableness of our initial RCV¹⁰⁴.

⁹⁹ This equity (unleveraged) portion of the RCV is equivalent to the Glas Cymru financial buffer.

¹⁰⁰ Embedded debt is debt taken out prior to April 2004 that carries a higher coupon than the allowed rate of return.

^{101 4.6%} less value of the 30% corporation tax shield, (1.38%).

¹⁰² The value of the overhang at the start of the 2006-07 financial year.

¹⁰³ See Chapter 19 of Volume 5.

We discuss the extent of the investment overhang from Quality and Standards II in Chapter 6 of Volume 5.
We also discuss how we have taken account of the unsubstantiated efficiencies claimed by East of Scotland Water Authority.

Summary of costs of funding the capital programme

The total asset financing costs in this draft determination are outlined in Table 5.16.

Table 5.16: Total asset financing costs 2006-10

Cash allowed return on the RCV	2006-07	2007-08	2008-09	2009-10
Cash allowed return on the RCV	£182.7m	£195.9m	£209.6m	£224.8m
IRC	£88.6m	£91.2m	£94.0m	£96.8m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Total	£458.4m	£498.3m	£534.3m	£573.9m

Chapter 6:

Setting an appropriate level of operating costs

Introduction

In this chapter we outline our analysis of the maximum total operating costs that we have allowed for in setting Scottish Water's maximum charges in the draft determination. This maximum total allowed for operating cost includes both 'base' operating costs (those costs required to deliver the current level of service) and 'new' operating costs (those costs that reflect improvements in customer service, public health compliance and environmental performance beyond that assumed in our benchmarking). The resulting profile of operating costs is compared with the experience of the water and sewe rage companies south of the border.

The allowed for operating costs have been reduced to reflect the scope for improvement in efficiency. It is important to emphasise that by 'efficiency' we mean delivering the same level of service for less money. Efficiencies, by definition, cannot result in lower levels of service.

It now appears likely that Scottish Water will achieve the target that we set at the last Strategic Review of reducing operating costs to £265 million by the end of the current regulatory control period in March 2006. This will represent a reduction of some £145 million in real terms over four years. This improvement in Scottish Water's efficiency is to be greatly welcomed.

Background to our assessment of the scope for operating cost efficiency

Operating expenditure comprises day-to-day running costs, as opposed to capital investment or financing costs. Operating expenditure therefore includes employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as an operating cost. Operating expenditure does not include depreciation or capital maintenance costs. It does include normal 'reactive' maintenance costs.

The Annual Return¹⁰⁵ from Scottish Water allows us to analyse operating costs by both function and activity.

This information submission defines functions and activities in the same way as the equivalent Return which the companies in England and Wales submit to Ofwat. The analysis of expenditure by function provides information about how much it costs to provide a particular service. The analysis by activity shows the cost of each activity comprising a service.

In order to make reliable like-for-like comparisons, we need to understand the factors that can influence the level of costs incurred by the water and waste water companies in the UK. These can typically be divided into those that are broadly controllable by management ('internal' factors) and those that can be outside the control of management ('external' factors).

It is possible to identify a number of external factors that can affect the costs of the water and waste water industry. They might include:

- the difficulty of the operating environment (eg population density, topography, types of water source, etc.);
- customer mix;
- customer requirements (issuing bills, etc.);
- environmental requirements (eg sewage effluent standards);
- volumes (water consumption, peak use, sewage loads);
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

¹⁰⁵ The Annual Return is an annual information submission that we receive from Scottish Water. It contains information about all aspects of Scottish Water's business and is the most comprehensive information submission that we collect. The Return is described in more detail in Volume 1, Chapter 3 of our methodology document 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10'.

Factors that are within the control of management would include:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding the purchasing and stocks of materials and consumables; and
- improvements in productivity.

Our assessment of efficiency also considers the service that is actually provided. Water and waste water undertakers in the UK have to provide a minimum standard of service that is expected by stakeholders. This would include:

- treating drinking water to the minimum standard required by legislation; and
- re moving and disposing of effluent in compliance with the minimum standards required by legislation.

An efficient water and waste water undertaker will carry out the minimum activities necessary to provide the service that customers expect.

We monitor Scottish Water's progress in improving its efficiency. We take account both of costs and of the level of service that is provided to customers. If Scottish Water were to cut costs but at the same time lower the level of service to customers, then we would not regard this as an efficiency. In our view, Scottish Water must at least maintain service to customers at the same time as cutting costs. This view of efficiency is consistent with the approach taken by other UK utility regulators.

Approach to setting allowed for operating costs in the Strategic Review of Charges 2006-10

We have set targets for this draft determination in terms of the total operating expenditure allowed for (excluding depreciation). We have set the total allowed for operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory control period and to meet all of the 'essential' and 'desirable' objectives of the Scottish Ministers. Figure 6.1 summarises how we have calculated the allowed for level of operating costs.

Figure 6.1: The calculation of the allowed for level of operating costs

Total allowed for operating expenditure

Baseline operating expenditure¹⁰⁶

Assessed changes in baseline operating expenditure

Efficiencies in baseline operating expenditure¹⁰⁷

New operating expenditure¹⁰⁸

Efficiencies on new operating expenditure

Public Private Partnership (PPP) operating expenditure

The impact of annual inflation on all of these components

We will review baseline operating expenditure, new operating costs and the scope for efficiency in turn.

Establishing a baseline for operating costs

The baseline level of operating costs is the expenditure incurred in the base year for this draft determination. We assess the scope for efficiency savings, and monitor performance against the baseline.

For each regulatory control period we need to identify one base year. We then monitor performance in each year of the regulatory control period against the level of service delivered in that base year. We have decided to use 2003-04 as the base year for this draft determination. This should make our monitoring more transparent and it should better reflect Scottish Water's current operating environment since it uses the most up-to-date operating costs available.

We have used information from Scottish Water's regulatory accounts for 2003-04 and the Annual Return 2004 to calculate the level of baseline operating costs in 2003-04.

¹⁰⁶ See Chapter 6 of Volume 6 for more detail on the calculation of baseline operating costs and any necessary adjustments.

¹⁰⁷ See Chapters 8, 9 and 10 of Volume 6 for more detail on the calculation of the efficiency gap.

¹⁰⁸ See Chapter 7 of Volume 6 for more detail on new operating costs.

To establish the level of baseline operating costs for 2003-04 we:

- take reported core costs;
- adjust for atypical costs (or savings);
- remove exceptional costs; and
- ensure that cost allocation practices are consistent with those in England and Wales.

The baseline expenditure calculations are illustrated in Table 6.1.

Table 6.1: Calculation of base operating expenditure 2003-04

Water operating expenditure		£m £198.4m
Less:	PPP costs	£0.0m
	Exceptionals	£31.7m
		£166.7m
Sewerage operating expenditure		£262.4m
Less:	PPP costs	£111.5m
	Exceptionals	£21.2m
		£129.8m
typicals		0
Capitalisation adjustments		0
Base operating expenditure		£296.5m

This adjusted total operating expenditure forms the baseline for this draft determination. We expect that the new Commission will update our analysis of baseline expenditure to 2004-05 in the final determination.

Our baseline for operating costs has also taken account of potential changes in costs during the regulatory control period. We take account of any such potential changes that can be outside the control of management and not reflected in consumer price inflation. Examples of such changes include:

- non-domestic rates;
- pension costs; and
- energy costs.

We have analysed these factors carefully to ensure that Scottish Water has sufficient resources to deliver an appropriate level of service. In its second draft business plan, Scottish Water claimed that it faced a number of unavoidable increases in operating costs, as shown in Table 6.2.

Table 6.2: Unavoidable operating cost increases claimed in Scottish Water's second draft business plan (2003-04 prices)

	Claimed costs			
Factor:	2006-07	2007-08	2008-09	2009-10
Non-domestic rates	£4.2m	£5.7m	£7.3m	£7.3m
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m
Energy costs	£2.4m	£2.4m	£2.4m	£2.4m
Bad debt	£4.5m	£10.8m	£19.5m	£30.2m
Retail business operating costs	£2.5m	£3.4m	£8.6m	£8.7m
Other costs eg the landfill tax	£1.6m	£1.9m	£2.2m	£2.5m
SEPA	£4.6m	£4.6m	£4.6m	£4.6m
Total	£24.9m	£33.8m	£49.6m	£60.8m

We have analysed Scottish Water's claims carefully. We have allowed for the additional baseline operating costs included in Table 6.3.

Table 6.3: Allowed for additions to base operating cost 2006-10

Combined service					
	Allow	Allowed for costs (2003-04 prices):			
Factor:	2006-07	2007-08	2008-09	2009-10	
Non-domestic rates	£3.8m	£5.2m	£6.7m	£6.7m	
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m	
Energy costs	£1.0m	£1.0m	£1.0m	£1.0m	
Bad debt	£0.0m	£0.0m	£0.0m	£0.0m	
Retail business operating costs	£0.0m	£0.0m	£0.0m	£0.0m	
Other costs eg the landfill tax	£0.0m	£0.0m	£0.0m	£0.0m	
SEPA	£0.0m	£0.0m	£0.0m	£0.0m	
Reporter	£0.3m	£0.3m	£0.3m	£0.3m	
Total	£10.2m	£11.6m	£13.1m	£13.1m	

Table 6.4 summarises the baseline that we have established.

Table 6.4: Summary of the operating cost baseline 2006-10

	2006-07	2007-08	2008-09	2009-10
Base operating costs (water)	£166.7m	£166.7m	£166.7m	£166.7m
Increase in operating costs – water	£7.5m	£8.9m	£10.4m	£10.4m
Base operating costs – waste water	£129.7m	£129.7m	£129.7m	£129.7m
Increase in operating costs – waste water	£2.8m	£2.8m	£2.8m	£2.8m
Total base operating costs	£306.7m	£308.1m	£309.6m	£309.6m

New operating costs

During the 2006-10 regulatory control period, Scottish Water will incur new operating expenditure to deliver improvements in:

- environmental compliance;
- · drinking water compliance;
- levels of service to customers; and
- the supply/demand balance.

We are interested specifically in the net new operating expenditure. Net new operating expenditure is best illustrated with an example.

New legislation requires a water and waste water undertaker to achieve higher standards of effluent discharge. A waste water treatment works is already in place, but the treatment processes employed will not meet the new required standards so the plant needs to be replaced. Currently, the works incurs £50,000 a year in operating expenditure. The new compliant treatment processes will incur £75,000 a year in operating expenditure The new operating expenditure is the difference between the post-investment level of operating expenditure and the pre-investment level (ie £75,000 less £50,000). Net new operating expenditure is therefore £25,000 per year.

N ew operating expenditure can place an upward pressure on customers' bills. It is there fore important that Scottish Water provides a clear justification for any new operating costs that it expects to incur, and that any claims for new operating expenditureundergo careful soutiny. Customers should not be expected to pay for unnecessary or inefficient levels of new operating expenditure

In its second draft business plan, Scottish Water submitted a total claim for new operating expenditure of £37 million by 2009-10, before efficiencies. This is set out in Table 6.5.

Table 6.5: Scottish Water's claimed new operating expenditure (pre-efficiency) 2006-10

	2006-07	2007-08	2008-09	2009-10
Water	£0.9m	£4.2m	£6.3m	£28.1m
Waste water	£1.9m	£3.3m	£5.1m	£9.1m
Total	£2.8m	£7.5m	£11.4m	£37.2m

We have assessed Scottish Water's claim in detail. Our analysis has shown that there are several reasons why less new operating expenditure should be allowed for. One of the most significant of these is that the companies in England and Wales in 2003-04 were already delivering enhanced water quality standards and, as such, this cost is already included in our benchmarking of relative efficiency Moreover, our review of the capital programme has suggested that many of the proposed solutions are over-scoped and were likely to incur higher operating costs than necessary.

Our analysis has also indicated that Scottish Water should incur lower new operating costs for waste water. This reflects our investment review and an analysis of the expected completion dates of projects.

We have concluded that we should allow for annual new operating expenditure of £12.2 million (in 2003-04 prices) by 2009-10. This is detailed in Table 6.6.

Table 6.6: Allowed for level of new operating expenditure (pre-efficiency) 2006-10¹⁰⁹

	2006-07	2007-08	2008-09	2009-10
Water	£0.2m	£0.6m	£1.4m	£6.9m
Waste water	£0.9m	£2.3m	£3.3m	£5.4m
Total	£1.1m	£3.0m	£4.7m	£12.2m

¹⁰⁹ Totals may not add exactly due to rounding.

Establishing the operating cost efficiencygap – the Ofwat models

We used the Ofwat econometric models to compare Scottish Water's performance against that of the companies in England and Wales.

Ofwat uses a top-down approach to benchmarking the English and Welsh companies and setting efficiency targets. It employs econometric modelling, a method that uses regression analysis to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics.

Ofwat and Professor Mark Stewart of the University of Warwick developed these econometric models in the early 1990s. In January 2005, Ofwat¹¹⁰ published the models that it used for its 2004 final determination. The models are broadly similar to those published by Ofwat in January 1999.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company.

The models take different forms and are summarised in Table 6.7.

Table 6.7: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Criticisms of the models

As part of its first draft business plan, Scottish Water submitted a number of papers by academics and consultants criticising the Ofwat econometric models. The majority of the papers submitted by Scottish Water were written for the water and sewerage companies in England and Wales or Water UK, the industry trade body. These papers were submitted to Ofwat, two of them at the 1999 price review only one paper specifically addresses the use of econometric models in Scotland.

The criticisms that we consider are relevant to our analysis of Scottish Water's relative efficiency are as follows:

- The choice of explanatory factors and type of model.
- The use of ordinary least squares (OLS) regression, as opposed to other methods of assessing relative efficiency.
- The assumption that the residual represents inefficiency only and that this can then be used to set efficiency targets for the water and sewerage companies.
- The application of models to Scottish Water that were derived using information from the companies south of the border.

We address each of the criticisms in turn.

The most common criticism of the models is that they do not accurately reflect the true cost drivers in the water and sewerage industry. Of wat has consulted with the companies south of the border and has tested alternative models. Of wat provided information to the companies on these alternatives, but concluded that any improvement in the explanatory power of the model was insufficient to justify a move away from the original model.

A number of commentators have criticised Ofwat's use of OLS regression to assess relative efficiency. Ofwat

¹¹⁰ A revised suite of models was originally published in January 2004, but these were subsequently revised in light of the companies' June 2004 submissions

¹¹¹ Davidson 'Ofwat Efficiency Assessments Using Econometric Models: A comment', 1999 and Montgomery Watson 'Water distribution cost drivers', 1999.

commissioned Europe Economics to consider alternatives to the OLS approach. Europe Economics used data envelopment analysis and stochastic frontier analysis. Ofwat noted that although the results of the alternative approaches were different in a number of respects, the overall picture was similar and in most cases there was a high degree of correlation between the results of all three methods¹¹².

The third key criticism of the models is that the residual from the econometric analysis should not be interpreted wholly as representing efficiency In a report for Water UK¹¹³, Professor John Cubbin breaks the residual down between six factors: omitted variables, poor proxy, sampling error, measurement error, mathematical formand efficiency The author carried out his analysis for each of the nine operating expenditure models and the nine capital maintenance expenditure models. He concluded that for the operating expenditure models, efficiency accounts for around 40% of the residual on the water service and around 50% of the residual on the sewerage service.

Ofwat reviewed the paper and concluded that uncertainties of this scale are unlikely under normal operating circumstances¹¹⁴. Several elements of the approach should allay Scottish Water's concerns regarding the results of the econometric models. We have followed Ofwat's lead in recognising the potential for errors in information and have adjusted the residuals downwards to reduce the impact of these errors. We have adjusted the water service residual by 10% and the sewerage service residual by 20%. We also take into account company-specific factors, which may reduce a company's residual by a significant amount.

Professor Cubbin has examined each of the Ofwat models in detail and set out reasons why he thinks the models are less suitable for application to Scottish Water. These reasons appear to relate to differences between the operating environment in Scotland and in England and Wales. Table 6.8 sets out the operational factors which he believes have an impact on each of the models.

Table 6.8: Issues raised by Professor Cubbin regarding the use of Ofwat's econometric models to calculate Scottish Water's relative efficiency

Model	Issues
Water distribution	Rurality: travel costs, electricity, number of service reservoirs
Water resources and treatment	Sources; size of treatment plant; raw water quality
Water power	Electricity distribution costs; non-pumping costs
Water business activities	Cryptosporidium testing; bad debt
Sewer network	Lateral sewers; possibly age and condition of assets
Large sewage treatment works	Possibly electricity costs
Small sewage treatment works	Very small works; deep rural effect; possibly septic tanks effect
Sludge treatment and disposal	Sparsity; specialised sludge treatment works
Sewerage business activities	Bad debt

Almost all of these potential problems were included as special factors in Scottish Water's submission.

Scottish Water's efficiency

We set out the results of our analysis of Scottish Water's efficiency in 2003-04 in Table 6.9. We present our results for the water and sewerage services separately.

The econometric models generate a series of efficiency scores (the residuals in the statistical analysis). We compare these residuals in order to establish the relative efficiency of Scottish Water and the companies south of the border.

We adjust the efficiency scores such that the average score in England and Wales is 100. These results do not take into account residual adjustments, any special factors or differences in the level of service provided to customers.

Table 6.9: Scottish Water's efficiency scores 2003-04

	Efficiency score
Water service	112
Sewerage service	130

¹¹² Ofwat, 'Water and sewerage service unit costs and relative efficiency: 2001-02 report', December 2002.

¹¹³ Professor John Cubbin, 'Assessing Ofwat's efficiency econometrics', March 2004.

¹¹⁴ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

The efficiency gap is calculated as follows: using the average water service as an example, Scottish Water's efficiency score is 112 and that of the average is 100. The gap is calculated as ((112-100)/112)*100.

The benchmark company for the water service in England and Wales was Wessex Water. For the sewerage service, the benchmark company was YorkshireWater.

Table 6.10 shows that the efficiency gap between Scottish Water and the benchmark companies is around 30%.

Table 6.10: Scottish Water's efficiency gaps

	Efficiency gap
Average – water service	11%
Wessex – water service	30%
Yorkshire – water service	26%
Average – sewerage service	23%
Wessex – sewerage service ¹¹⁵	39%
Yorkshire – sewerage service	34%
Average – combined	16%
Wessex – combined	34%
Yorkshire – combined	29%

We have applied the Ofwat residual adjustments in assessing Scottish Water's relative efficiency. Table 6.11 shows that even after the adjustments to the residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is around 25%.

Table 6.11: Scottish Water's efficiency gaps after adjustments of the residuals

	Efficiency gap
Average – water service	10%
Wessex – water service	28%
Yorkshire – water service	23%
Average – sewerage service	19%
Wessex – sewerage service	33%
Yorkshire – sewerage service	29%
Average – combined	14%
Wessex – combined	30%
Yorkshire – combined	26%

Establishing the operating cost efficiency gap – the modified Ofwat models

We repeated our econometric analysis using recalculated ve rsions of Ofwat's models. We have reworked the Ofwat models to include information from Scottish Water in 2003-04. We excluded information about the costs, customers served and asset bases of Scottish Water's PPP contracts. We recognise that Scottish Water cannot control the operating costs at PPP works.

The results of our analysis are shown in Table 6.12. This table also includes the results of our original analysis using the Ofwat models. We show Scottish Water's relative efficiency in the water service and sewerage service separately.

Table 6.12: Results of our relative efficiency modelling

	Efficiency score – Ofwat models	Efficiency score – extended models
Water service	112	112
Sewerage service	130	127

Scottish Water's level of efficiency appears slightly better when we use the modified models. Table 6.13 shows the efficiency gap between Scottish Water and the average in England and Wales and between Scottish Water and the two benchmark companies. Table 6.13 also includes the results of our analysis using the unadjusted models. Table 6.13 shows that the efficiency gap between Scottish Water and the benchmark companies is still around 30%, even when we use the modified models.

¹¹⁵ The reason that there is a larger efficiency gap to Wessex than Yorkshire on the sewerage service is that at this stage in our analysis, we have not taken into account either special factors or pension adjustments.

Table 6.13: Scottish Water's efficiency gaps

	Efficiency gap – Ofwat models	Efficiency gap – extended models
Average – water service	11%	11%
Wessex – water service	30%	30%
Yorkshire – water service	26%	26%
Average – sewerage service	23%	21%
Wessex – sewerage service	39%	38%
Yorkshire – sewerage service	34%	33%
Average – combined	16%	15%
Wessex – combined	34%	33%
Yorkshire – combined	29%	29%

Table 6.14 shows that, even after the adjustments to residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is around 25% to 30%.

Table 6.14: Scottish Water's efficiency gaps after residual adjustments

	Efficiency gap – Ofwat models	Efficiency gap – extended models
Average – water service	10%	10%
Wessex – water service	28%	27%
Yorkshire – water service	23%	23%
Average – sewerage service	19%	18%
Wessex – sewerage service	33%	32%
Yorkshire – sewerage service	29%	28%
Average – combined	14%	13%
Wessex – combined	30%	29%
Yorkshire – combined	26%	25%

Establishing the operating cost efficiency gap – our alternative model

In line with the approach of the Competition Commission, we have developed an additional model to assess the scope for efficiency using a different approach¹¹⁶.

We originally developed the alternative model as part of the Strategic Review of Charges 2002-06. Our alternative model represents a useful check on the results of the econometric modelling.

In preparation for this draft determination we reviewed both the cost drivers included in, and the structure of, the model. We developed two versions; one which used information from the ten water and sewerage companies in England and Wales; and a second, which also includes management information from Scottish Water.

We have used both versions of the alternative model to assess Scottish Water's relative efficiency. Both versions use a fundamentally different approach to Ofwat's econometric models.

The results of our analysis are set out in Table 6.15. This table includes the results of our analysis for both versions of the alternative model. It includes the results for the water and sewerage services separately.

Table 6.15: Scottish Water – analysis of performance using the alternative model

	Efficiency score – England & Wales based alternative model	Efficiency score – alternative model including Scottish Water
Water service	110	115
Sewerage service	130	129

The results of this analysis suggest that the absolute performance of Scottish Water appears to be slightly worse when we use the alternative model, although the difference is not significant. However, our analysis focuses on Scottish Water's efficiency relative to the companies in England and Wales. Table 6.16 shows the efficiency gap between Scottish Water, the average in England and Wales and the two benchmark companies – Wessex Water on the water service and Yorkshire Water on the sewerage service¹¹⁷. Table 6.16 also shows the results of our analysis using the revised Ofwat econometric models¹¹⁸.

¹¹⁶ The Competition Commission's consideration of the price limits for Mid Kent Water and Sutton & East Surrey Water in 2000.

¹¹⁷ Ofwat identified Wessex Water and Yorkshire Water as its chosen benchmark companies in its 'Water and sewerage service unit costs and relative efficiency 2003-2004 report'.

¹¹⁸ The results of the econometric models include adjustments to residuals, described in Chapter 8 of Volume 6.

Table 6.16: Scottish Water's efficiency gap

	Efficiency gap – revised Ofwat econometric models	Efficiency gap – alternative model including Scottish Water
Average – water service	10%	13%
Wessex – water service	27%	39%
Yorkshire – water service	23%	24%
Average – sewerage service	18%	22%
Wessex – sewerage service	32%	39%
Yorkshire – sewerage service	28%	40%
Average – combined	13%	17%
Wessex – combined	29%	39%
Yorkshire – combined	25%	31%

The results set out in Table 6.16 show that Scottish Water's relative performance appears to be worse for both the water service and the sewerage service when we assess its performance using the alternative model. The difference is smaller when we look at the relative performance for both water and sewerage together.

Adjustments to our models for special factors

Our approach to benchmarking is top down. It looks at the overall level of costs that Scottish Water incurs and compares this with the costs incurred by the companies south of the border. The approach recognises that costs are influenced by the conditions in which a company operates. It measures the impact of factors that are outside the control of managers on the level of costs incurred.

It is not possible to include every factor that may have an impact on companies' costs. Even if we could identify every factor that influences a company's costs, such an approach would be impactical. The models would become too complex and many of the factors are likely to add little to our understanding.

We are keen that our analysis is as complete as possible and compares like with like. It is important, therefore, that we identify any special factors that affect Scottish Water's operating costs (either causing them to be higher or lower) that are not captured by our models. We asked Scottish Water to draw such factors to our attention.

In assessing special factors for Scottish Water we used the same approach as Ofwat uses for the companies in England and Wales. Scottish Water had to provide evidence in the following areas in order to justify a special factor¹¹⁹.

- What is the justification of the special circumstances that demonstrate a material difference from industry norms? Scottish Water has to have explained how the special factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- 2. What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs over and above that which would be incurred without these factors?
- 3. What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- 4. Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?

Scottish Water provided us with three submissions which claim that special factors result in higher operating costs than those predicted by our econometric models. The three submissions are:

- Scottish Water special factors submission accompanying the Annual Return, June 2004;
- special factors submitted with Scottish Water's first draft business plan, October 2004; and
- special factors submitted with the second draft business plan, April 2005.

¹¹⁹ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998, available at: www.ofwat.gov.uk.

Annual Return June 2004

Scottish Water provided its initial evidence on special factors in its Annual Return of June 2004. Scottish Water argued that the following special factors caused it to incur a higher level of operating expenditure than could be justified by our benchmarking.

Geographical

- Travel costs: Due to the size of Scottish Water's service area, employees working on the assets have to travel long distances. In addition, personnel from areas such as customer service and business, laboratory and contract services also have to travel extensively.
- High number of small treatment works: According
 to Scottish Water, the sparsity of the population
 requires it to operate a large number of treatment
 works in comparison with the companies south of the
 border.
- 'Flashy'¹²⁰ supplies: Scottish Water claimed that many of its treatment works deal with supplies that are difficult to treat due to the changeable nature of the raw water.
- Electricity: Scottish Water claimed that in some regions its operating costs are increased due to higher charges (distribution use of system charges and the tariff itself) than those incurred by the companies in England and Wales. It also claims that the use of electricity for activities other than pumping is higher in Scotland than in England and Wales and that this is not taken into account in the models.
- Sludge treatment costs: Scottish Water indicated that it had to transport sludge greater distances than is the norm in England and Wales (from small rural areas to dedicated sludge treatment centres).

Asset base

 Leakage: Scottish Water argued that it has inherited an asset base with a leakage rate that is much higher than in England and Wales. It asserts that this has an impact on costs (due to the need to treat relatively more water per inhabitant) which the model does not take into account.

Economic

- Household bad debt, billing and metering:
 Scottish Water argued that it has a higher level of customer bad debt than that of the companies in England and Wales. It suggests that this is largely due to factors that are outside its control.
- Purchase of materials: Scottish Water claimed that there is an additional cost when purchasing materials because most of these are purchased in England and transportation costs are significant.

Legal

- Sewer laterals: Scottish Water has a legal responsibility for lateral sewers (the drains that connect customers' properties to the main sewer). In England and Wales these are the responsibility of the customer.
- Freedom of Information Act: Scottish Water argued that it has to comply with the Freedom of Information Act, whereas the privatised water and sewerage companies do not.
- Queries from politicians: Scottish Water argued that as a public body it receives a larger number of enquiries from politicians than the companies in England and Wales so incurs additional costs in this area
- Removal of phosphorus and nitrates: Scottish
 Water indicated that it has to incur higher costs to
 remove phosphorus and nitrates from sewage
 effluent than the companies south of the border. This
 is due to tighter consent conditions imposed by the
 Scottish Environment Protection Agency (SEPA).
- Cryptosporidium standards: Scottish Water argued that the sampling requirement for cryptosporidium imposed by the Drinking Water Quality Regulator

¹²⁰ 'Flashy' conditions are where a greater than or equal to a four-fold change in colour in a 12-hour period can occur.

(DWQR) is greater than the sampling programmes undertaken by the water and sewe rage companies. This leads to additional costs.

First draft business plan (October 2004)

Scottish Water provided a 'First draft special factors submission' with its first draft business plan. This set out a revised view of the special factors that might apply to Scottish Water.

It repeated many of the special factors suggested in June 2004. In some cases it provided additional evidence to support particular special factors. Scottish Water also identified some new special factors and withdrew others that it now considered to be immaterial. The new factors were as follows:

- Central regulatory laboratory: Scottish Water argued that the cost of its central regulatory laboratory is an additional operating cost that is not allowed for in the benchmarking models. This reflects the fact that in England and Wales the capital costs would be included within the current cost depreciation charge. In Scotland, the long-term financing arrangements for the laboratory mean that the cost is included within operating costs.
- Service reservoirs and water towers: Scottish
 Water argued that it has proportionately far more
 service reservoirs and water towers than the average
 for companies in England and Wales. It argued that
 this reflects the sparse population distribution,
 Scotland's topography and the assets it inherited
 from the former water authorities.
- Waterworks sludge disposal: Scottish Water argued that it faces an additional cost due to the need to dispose of waterworks sludge to landfill rather than farmland. Scottish Water explained that it is not exempt from the Waste Management Licensing Regulations, unlike the companies in England and Wales.

In its first draft business plan, Scottish Water explained that it had undertaken further analysis and now

considered that the following factors were not sufficiently material to be considered:

- the additional costs associated with the high number of small treatment works;
- the additional costs associated with sludge treatment; and
- the costs of removing phosphorus and nitrates.

Second draft business plan (April 2005)

Scottish Water further revised and developed its claim for special factors in its second draft business plan. There were no changes to the operating expenditure special factors. Scottish Water did propose two new special factors that affected its level of capital maintenance expenditure. These special factors related to water resources and treatment, and service reservoirs.

Scottish Water's assessment (in 2003-04 prices) of the impact of special factors on its benchmarked annual operating expenditure changed only marginally between the first and second draft business plans. This is shown in Table 6.17.

Table 6.17: The annual financial impact of special factors (2003-04 prices)¹²¹

Special factor	October 2004 submission	April 2005 submission
OPERATING EXPENDITURE		
Inherited asset base		
Leakage	£7.8m	£9.8m
Central regulatory laboratory	£0.7m	£0.7m
Geography and environment		
Travel costs	£16.8m	£11.4m
Service reservoirs and water towers	£1.9m	£2.1m
Electricity	£4.6m	£4.7m
Supply of materials to rural locations	£0.5m	£0.5m
Bad debt	£7.8m	£7.3m
Legal		,
Sewer laterals	£10.0m	£11.7m
Waterworks sludge disposal	£2.3m	£2.3m
Political queries	£0.3m	£0.3m
Cryptosporidium	£1.7m	£2.0m
Operating expenditure total	£54.4m	£52.7m
CAPITAL MAINTENANCE EXPENDITURE		
Water resources and treatment	-	£17.4m
Service reservoirs	-	£1.0m
Capital maintenance total	-	£18.4m
TOTAL	£54.4m	£71.1m

Scottish Water has claimed that there are 11 special factors which increase its operating costs and which are not taken into account by the econometric models. It has also claimed that there are two special factors that increase its capital maintenance costs. We reviewed each of these special factors in detail.

Our response to claims of special factors

We found that some of the claims for special factors are either not material or are not outside managerial control. However, we have accepted some of the special factors that Scottish Water identified and have made appropriate adjustments to our benchmarking.

We have found no evidence to support the claim for an adjustment to benchmarked capital maintenance costs. In the case of operating expenditure, benchmarked costs have been adjusted by £17.4 million per annum in 2003-04 prices. Our response is detailed in Table 6.18.

Table 6.18: Summary of our response to special factors

Special factor	Our response	Allowance made
OPERATING EXPENDITURE		
Inherited asset base		
Leakage	No allowance	
Central regulatory laboratory	Re-categorisation of central regulatory laboratory costs	£0.7m
Geography and environment		
Travel costs (including supply of materials to rural locations)	Partial allowance	£6.5m
Service reservoirs and water towers	No allowance	
Electricity	Partial allowance	£2.0m
Bad debt	Partial allowance	£2.6m
Legal		
Sewer laterals	Partial allowance	£3.9m
Waterworks sludge disposal	Partial allowance	£0.9m
Political queries	No allowance	
Cryptosporidium	No allowance	
Other		
Public septic tanks	Partial allowance	£0.8m
Operating expenditure total allowance		
CAPITAL MAINTENANCE EXPENDITUR	RE	
Water resources and treatment	No allowance	
Service reservoirs	No allowance	
Capital maintenance total allowance		
TOTAL ALLOWANCE		£17.4m

This includes a small allowance for public septic tanks that was not requested by Scottish Water.

Adjustments for differences in the scope of activities

We now have much better information about Scottish Water's activities and about the quality of service it provides. In this draft determination we have taken account of both of these in assessing the scope for improvement in Scottish Water's efficiency.

In England and Wales the companies provide a broadly equivalent level of service to their customers. The scope of activity each company provides is also comparable. In general, therefore, Ofwat does not have to adjust the result of its models to reflect any differences in the scope of activities or the level of service between companies.

¹²¹ Totals may not add exactly due to rounding.

In Scotland, by contrast, the scope of activities and the levels of service provided to customers are different from that provided in England and Wales. Such differences matter to customers, impacting not only on the service they receive, but also on the charges they pay.

The scope of Scottish Water's activities is in large part a function of the history of the water and waste water industry in Scotland.

Activities where the scope of activity in Scotland is greater

- Scottish Water is responsible for lateral sewers (sewer pipes connecting properties to main sewers).
 In England and Wales most lateral sewers are the responsibility of customers.
- Scottish Water is responsible for public septic tanks.
 These are common in Scotland but rare in England and Wales.

Activities where the scope of activities in Scotland is smaller

- Around one-quarter of all households in England and Wales are metered, compared with only around 0.03% in Scotland, thus adding to the cost of support activities such as meter reading.
- Sophisticated water treatment processes to remove agricultural nitrate and pesticide pollution are much more commonly required in England and Wales than in Scotland.
- Companies in England and Wales have to maintain leakage at specified, economic levels. There are currently no leakage targets in Scotland.
- Companies in England and Wales have a legal duty to promote the efficient use of water by customers, whereas there is no such duty in Scotland.
- Reporters are used in Scotland and in England and Wales to scrutinise the regulatory returns. In Scotland the Scottish Executive pays for the Reporter. In England and Wales the companies meet these costs.

There are other differences that affect the scope of activities, such as major differences in population density and topography. However, we believe that our benchmarking analysis takes account of most, if not all, of these differences.

We have used YorkshireWater as a comparator company for both water and waste water. We reduce Yorkshire Water's operating costs to reflect its implied level of costs if it engaged in the same scope of activities as Scottish Water. This widens the efficiency gap, and suggests that there is greater scope for efficiency¹²².

Our analysis of differences in the scope of activities enables us to draw more accurate conclusions about Scottish Water's relative performance. In Tables 6.19 and 6.20 we summarise the adjustments we have made to reflect differences in scope.

Table 6.19: Summary of adjustments to the allowed for operating expenditure for differences in the scope of activities for the water service¹²³

Water activity	Effect on Scottish Water's allowed for operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Leakage	Decrease	£6.8m
Nitrate removal	Decrease	£1.6m
Legal duty to promote efficient water use	None	Immaterial
Reporter costs	Decrease	£0.15m
Total	Decrease	£10.8m

Table 6.20: Summary of adjustments to the allowed for operating expenditure for differences in the scope of activities for the waste water service¹²⁴

Waste water activity	Effect on Scottish Water's allowed for operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Reporter costs	Decrease	£0.15m
Total	Decrease	£2.3m

The adjustments represent approximately 12% of Yorkshire Water's modelled water operating cost. This

¹²² We have also examined the impact on Wessex Water – the other leading comparator company. The impact on both Wessex Water and Yorkshire Water is very similar.

¹²³ Totals may not add exactly due to rounding.

¹²⁴ Totals may not add exactly due to rounding.

has the effect on the efficiency gap as shown in Table 6.21. In our base year, 2003-04, these adjustments resulted in an efficiency gap of 32% for the water service and 24% for the waste water service.

Table 6.21: Adjusted modelled answers

	Water ¹²⁵	Waste water ¹²⁶
Initial gap	27%	28%
Gap after special factors	25%	23%
Gap after scope	32%	24%

The level of service provided by Scottish Water

It is essential that Scottish Water does not seek to live within its charge cap by reducing the level of service it provides to customers. We have therefore set milestones for improvements in customer service.

We plan to use benchmarking to monitor the level of customer service provided by Scottish Water. We can use the overall performance assessment (OPA) framework developed by Ofwat, and information from the companies south of the border, to monitor both Scottish Water's absolute and relative performance. We have not adjusted our calculation of the scope for efficiency to reflect the difference in levels of service.

We had intended to make similar adjustments to Scottish Water's operating costs to reflect the difference in the level of service provided. Unfortunately, Scottish Water did not provide the necessary information that we had requested in our business plan guidance.

As a result we have set milestones for improvement in the OPA.

The OPA depends on each company's performance in each of 15 individual performance measures. We can also compare performance for each individual measure.

We have included as many of the measures that are used by Ofwat as possible in our assessment of the OPA score for Scottish Water. Table 6.22 sets out the measures that we have included.

Table 6.22: Components of the OPA assessment

OPA component	Included or not	Basis and comparability Actual performance, equivalent measure		
Inadequate pressure	Included			
Supply interruptions	Included	Actual performance, equivalent measure		
Hosepipe restrictions	Included	Assumed performance		
Drinking water quality	Included	Actual performance, some difference in definition of measure		
Sewer flooding (overloaded sewers)	Included	Actual performance, equivalent measure		
Sewer flooding (other causes)	Included	Actual performance, equivalent measure		
Sewer flooding (at risk)	Included	Actual performance, equivalent measure		
Company contact (3 out of 4 measures)	Included	Actual performance, equivalent measure		
Assessed customer service	Not included			
Sewage treatment works compliance	Included	Actual performance, equivalent measure		
Category 1 & 2 pollution incidents (sewerage)	Not included			
Category 3 pollution incidents (sewerage)	Not included			
Category 1 & 2 pollution incidents (water)	Not included			
Leakage	Included	Assumed performance		

Scottish Water's OPA score for 2003-04 is 159. Figure 6.2 compares this with the equivalent scores for the water and sewerage companies in England and Wales¹²⁷.

¹²⁵ The gap for the water service is with respect to Wessex Water.

¹²⁶ The gap for the waste water service is with respect to Yorkshire Water.

¹²⁷ Adjusted to reflect the parameters, which we are able to measure on an equivalent basis in Scotland.

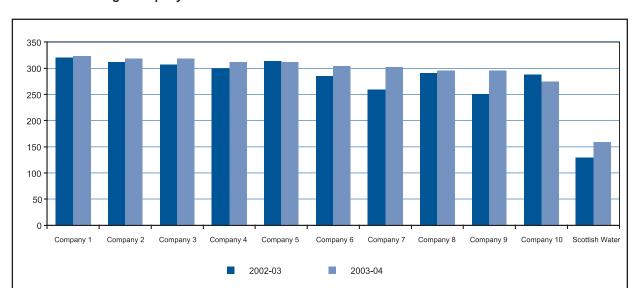


Figure 6.2: OPA scores for 2002-03 and 2003-04 – water and sewerage company measures

Scottish Water's overall performance was relatively poor. It scored 58% of the score of the worst performing company in England and Wales and 49% of the best performing company's score.

Scottish Water clearly has considerable room for improvement in the level of service it provides to its customers. We have set charges in this draft determination such that Scottish Water's customers should expect to see improving service during the regulatory control period. Our assumption is that Scottish Water's performance should be broadly equivalent to that of the companies south of the border by the end of this regulatory control period.

We have set milestones to monitor improvements in the level of service provided by Scottish Water each year. These milestones will help us to gauge whether Scottish Water is making good progress in closing the level of service gap. These milestones will also allow us to confirm that efficiency targets are not being met at the expense of customer service.

Table 6.23 shows the milestones that we expect Scottish Water to achieve.

Table 6.23: Milestones for the overall performance assessment

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPA	159	159	159	195	232	268	305

Scottish Water's response ¹²⁸ to our second open letter to Ministers ¹²⁹ suggests a misunderstanding of the way that the OPA is calculated. Scottish Water stated: "OPA scores will vary from year to year based on the relative performance with the water companies in England and Wales". In fact, Scottish Water's OPA score will vary only in response to its own customer service performance.

In its response, Scottish Water also suggested that it should be not expected to improve its performance as Ministers had merely required serviceability to be maintained. Such a suggestion overlooks the very significant investment required by Ministers to improve levels of service to customers, remove development constraints and improve public health/environment performance. This investment should result in considerable improvements in Scottish Water's OPA score. We would also emphasise that judicious use of operating costs by Scottish Water could improve its OPA performance quite significantly.

¹²⁸ Letter dated 2/6/2005, available on our website.

¹²⁹ Letter dated 10/5/2005, available on our website.

Required improvement in Scottish Water's performance

It is necessary for us to distinguish between the efficiency gap that exists today and the gap that could exist in the future. In its 2004 price review, Ofwat has set prices that require all of the companies south of the border to improve their absolute level of efficiency. It has also identified that there is scope for well-managed companies to out-perform their regulatory contracts.

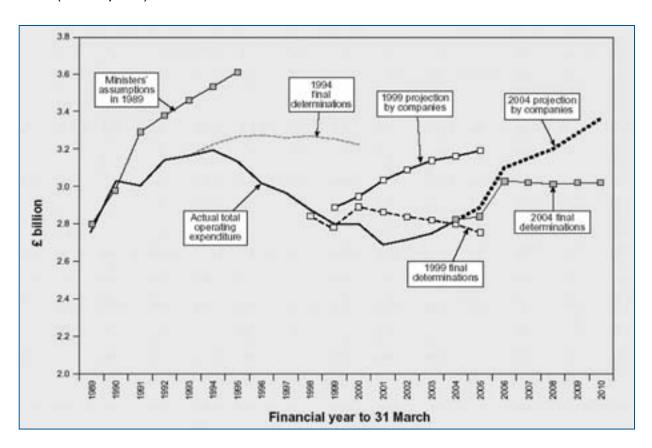
The expectation made by Ofwat when setting prices for the companies south of the border therefore comprises two elements:

- an overall improvement in the efficiency of the industry; and
- a 'catch-up' factor, by which all companies (except of course the leading company) have to narrow the gap to the leading company.

Ofwat set prices that reflected the scope for the industry to improve its efficiency at approximately 0.6% a year for the water service and 1% a year for the sewerage service. It also required companies to narrow 60% of the gap to the frontier company.

The success of the companies south of the border in out-performing their regulatory contracts is illustrated in Figure 6.3.

Figure 6.3: Comparison of total operating costs for the water and sewerage industry in England and Wales (2003-04 prices)¹³⁰

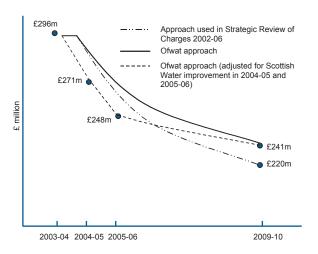


We considered the following four approaches to assessing the scope for Scottish Water to improve:

- retain the approach that we used in the Strategic Review of Charges 2002-06;
- adopt Ofwat's approach using a 2003-04 baseline;
- adopt Ofwat's approach using a 2003-04 baseline, but take account of continuing improvements by Scottish Water in 2004-05 and 2005-06; and
- determine the required pace of improvement that would bring Scottish Water's performance in line with the companies over the period to 2014.

Figure 6.4 shows the impact of these options on Scottish Water's baseline operating costs.

Figure 6.4: Scope for improvement in operating costs (in 2003-04 prices)



We decided to adopt the approach that is used by Ofwat, adjusted to take account of the rapid improvement by

¹³⁰ From Ofwat's 'Water and sewerage service unit costs and relative efficiency 2003-04 report', p10.

Scottish Water that is likely in the last two years of the current regulatory control period. We have accepted Scottish Water's view on its likely improvement over the remainder of this regulatory control period. This assumption affects the level of operating costs that we have allowed for in the earlier years of the regulatory control period. It does not affect the overall closure of the operating cost efficiency gap achieved by 2009-10.

Allowed for level of operating expenditure

The level of operating cost that we have allowed for provides the same scope for Scottish Water to outperform as Ofwat would normally make available to the companies south of the border. We have allowed for the profile of operating expenditure for the 2006-10 regulatory control period outlined in Table 6.24.

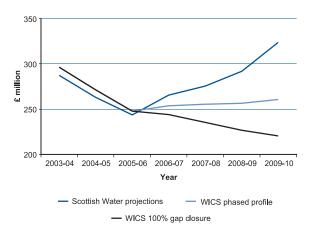
Table 6.24: Summary of allowed for total operating costs for 2006-10¹³¹

		2006-07	2007-08	2008-09	2009-10
	Baseline operating expenditure	£296.5m	£296.5m	£296.5m	£296.5m
Less	Efficiencies in the baseline	£53.0m	£53.8m	£54.7m	£55.6m
Plus	Assessed changes to baseline operating expenditure	£10.2m	£11.6m	£13.1m	£13.1m
Less	Efficiencies in assessed changes to the baseline	£0.9m	£1.4m	£2.1m	£2.6m
Plus	New operating expenditure	£1.1m	£3.0m	£4.7m	£12.2m
Less	Efficiencies in new operating expenditure	£0.1m	£0.4m	£0.9m	£2.9m
Equals	Sub total operating expenditure	£253.9m	£255.4m	£256.6m	£260.8m
Plus	PPP operating expenditure	£116.0m	£116.0m	£117.9m	£121.3m
Plus	Inflation ¹³² from 2003-04	£22.6m	£30.6m	£39.0m	£48.2m
Equals	Total allowed operating expenditure	£392.5m	£402.0m	£413.5m	£430.3m

In its second draft business plan, Scottish Water said that it would incur a significant increase in its operating costs. Figure 6.5 illustrates the difference between its forecast level of operating costs and the level of operating cost that we have allowed for. We also show the scope that we believe Scottish Water has to out-perform. The scope for this out-performance has

been calculated with reference to the expected performance of the benchmark companies.

Figure 6.5: Comparison between the allowed for operating cost, the scope to out-perform and Scottish Water's projection¹³³ (in 2003-04 prices)



Monitoring performance on operating expenditure

Our role as regulator is to set challenging, achievable levels of performance for Scottish Water which promote customers' interests. It is not for us to direct how this performance should be achieved. This is a matter for the board and management of Scottish Water.

It is our role, however, to monitor progress against the minimum acceptable performance levels that we set, and to verify that service levels to customers do not suffer as a result of management action to reduce costs.

The Strategic Review of Charges 2006-10 is only the start of the regulatory control process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance.

¹³¹ Numbers may not add exactly due to rounding.

¹³² We have assumed annual inflation of 2% between 2003-04 and 2009-10.

¹³³ We have used Scottish Water's regulatory accounts for 2003-04 to calculate operating expenditure in that year. This figure is higher than that reported by Scottish Water in its business plan submission, which is why our figures for 2003-04 to 2005-06 are higher than Scottish Water's figures.

Introduction

This chapter sets out our preliminary views on the revenue required by Scottish Water for the 2006-10 regulatory control period. It also sets out the impact of this level of revenue on customers' charges. We explain in detail how we have set both the required level of revenue and the corresponding charge caps. We also describe the assumptions we have used in our financial modelling.

We have set these caps at a level which ensures that Scottish Water's revenue is sufficient to meet the expenditure required for the effective exercise of its core functions. At the same time the charges are set no higher than is necessary to ensure that if Scottish Water were to perform in line with the assumptions in this draft determination, it could comply with all of the same cash-based financial ratios that Ofwat used for the companies in England and Wales in its 2004 final determination¹³⁴. This ensures that the interests of both current and future customers have been taken into account.

One of the key issues that we address in this chapter is the impact of the separation of retail activities for non-household customers¹³⁵. We explain how we have set appropriate charge caps for both the wholesale and retail activities.

Finally, we consider the impact of the proposed charge caps on customers and the prospects for future charges.

Financial modelling

The Ministerial Guidance which we received in February 2005 required us to ensure that the charges we set for this regulatory control period would not disadvantage future customers. Ministers also wanted Scottish Water's financial strength to be improved, if possible, over the 2006-10 regulatory control period. We have adopted the same financial ratios that Ofwat used to assess the financial sustainability of the water industry south of the border.

The financial ratios that we have used are summarised in Table 7.1.

Table 7.1: Financial ratios used in this draft determination

Financial ratio	Targeted value
Cash interest cover	Around 3 times
Adjusted cash interest cover	Around 1.6 times
Funds from operations: debt	Greater than 13%
Retained cashflow: debt	Greater than 7%
Gearing	Less than 65%

We have focused on the cash-based financial ratios. However, we have ensured that the debt to regulatory capital value (RCV)¹³⁶ ratio improves over the regulatory control period.

Development of the model

We developed the model using our own in-house staff. The model has been subject to rigorous internal analysis to ensure that the results are consistent with our expectations when inputting test information. We also asked Ernst & Young LLP to review both the initial and final versions of the financial model.

Assumptions in the model

In this draft determination we have used two indices to take account of cost inflation, namely:

- the consumer price index (CPI) for all non-asset costs; and
- the construction output price index (COPI), to assess the impact of increases in prices on investments.

CPI

We believe that the CPI is an appropriate measure of inflation for non-capital goods costs. The CPI is now the measure of inflation that is used as a target measure by the Government and the Bank of England. We have assumed that CPI will be 2% for each year of the regulatory control period. This is in line with the Bank of England's target.

¹³⁴ Office of Water Services, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

¹³⁵ This separation of activities is a result of the Water Services etc. (Scotland) Act 2005. This Act is described in detail in Volume 2.

¹³⁶ Compliance on the funds from operations divided by total net outstanding debt has been set at the minimum level for compliance. This ratio effectively determined the initial RCV.
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COPI

We have used COPI to analyse the effect of inflation on capital expenditure COPI measures the movement in prices of construction projects. We have used the 'all new construction output index' in this draft determination. We have set COPI at 3% a year.

Working capital and other balance sheet assumptions

Our assumptions are outlined in Table 7.2.

Table 7.2: Balance sheet assumptions

Title	Assumption	Value for 2006-10
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure, excluding PPP	1.5%
Prepayments and accrued income	Percentage of previous year's revenue	5.5%
Other debtors	Percentage of previous year's revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25.60%
Accruals and deferred income	Percentage of operating expenditure, including PPP	28.0%
Other creditors	Percentage of operating expenditure, including PPP	8.0%
Cash	Balance held by Scottish Water	£2 million

Monitoring financial performance

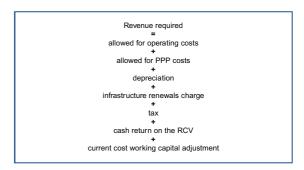
Our approach to charge setting in this draft determination has simplified how we monitor Scottish Water's financial performance. We can monitor progress by reviewing Scottish Water's financial indicators with those predicted by the financial model.

This draft determination assumes that Scottish Water should be capable of delivering the outputs required in the Ministerial Guidance, meeting the milestones for customer service improvement and complying with each of the targeted financial ratios in 2009-10.

Calculation of the revenue cap

The calculation of the required level of revenue

In Volume 5, we explained that we have moved towards the RCV approach to charge setting. Under this approach, the revenue requirement¹³⁷ is calculated by:



We used the financial model to identify the cash return on the RCV required by Scottish Water in 2009-10. The rate of return and the embedded debt allowance were both fixed, so we were able to determine the RCV that we required in 2009-10 and the implied initial RCV¹³⁸. The constraint was that Scottish Water should comply in 2009-10 with all of the targeted cash-based financial ratios. In practice, of course, Scottish Water will only comply with all of these financial ratios if it were to satisfy all of the assumptions underpinning this draft determination.

Table 7.3 sets out the RCV in each year of this regulatory control period.

Table 7.3: Calculation of RCV in each year of this regulatory control period (outturn prices)

	2006-07	2007-08 2008-09		2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Plus Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
Plus New investment	£534.3m	£593.0m	£633.3m	£689.5m
Less Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Less Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Less Disposal of Assets	£1.0m	£1.1m	£1.1m	£1.1m
Equals Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

¹³⁷ Cash received from the disposal of assets is deducted from the revenue requirement.

¹³⁸ The initial RCV was backwards calculated taking account of capital expenditure, depreciation, inflation and tax payable.

Inputs to the calculation of the required level of revenue

Allowed for operating costs

We have input the total allowed for operating costs for both the water and the waste water services. The total allowed for level of operating costs includes:

- baseline costs;
- additions to the baseline;
- new operating costs;
- the scope for efficiency; and
- the impact of inflation.

Total allowed for operating costs are set out in Table 7.4.

Table 7.4: Total allowed for operating costs (outturn prices)

	2006-07	2007-08 2008-09		2009-10
Total water operating costs	£150.5m	£153.8m	£157.5m	£163.6m
Total waste water operating costs	£117.5m	£121.1m	£124.3m	£128.5m
Additional Retail Costs	£4.1m	£2.6 m	£2.1m	£1.6m
Total allowed for operating costs	£272.1m	£277.6m	£283.9m	£293.8m

Allowed for PPP costs

The required level of revenue takes into account the costs of PPP contracts. In Table 7.5, we show the original costs expected to be incurred in relation to the contracts that were signed by the three former water authorities. The table also shows the new additional costs incurred as a result of extra investment that is now required and which does not appear to have been foreseen when the original contracts were signed.

Table 7.5: Total allowed for costs for PPPs

Total allowed for costs for PPPs	2006-07	2007-08	2007-08 2008-09	
Original contract costs	£121.4	£123.8m	£126.3m	£128.8m
Additional costs resulting from additional investment	£1.0m	£1.0m	£3.2m	£7.0m
Total allowed for PPP costs	£122.4m	£124.8m	£129.5m	£135.8m

Depreciation

We input information on depreciation of the modern equivalent asset value of existing assets and an appropriate charge for new assets that are added during the regulatory control period. We have also input an infrastructure renewals charge, which we have set equal to the expected infrastructure renewals expenditure. The depreciation and infrastructure renewals charges are set out in Table 7.6.

Table 7.6: Depreciation and infrastructure renewals charges

Depreciation category	2006-07	2007-08	2008-09	2009-10
Current cost depreciation of existing assets	£178.8m	£184.2m	£182.3m	£180.1m
Current cost depreciation of new assets (after 1st April 2006)	£8.3m	£27.0m	£48.4m	£72.2m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Total depreciation and infrastructure charges	£275.7m	£302.4m	£324.7m	£349.1m

Tax

We have taken a conservative approach to the corporation tax that may be payable by Scottish Water (i.e. the highest tax liability to be incurred during this regulatory control period). Our approach takes account of the introduction of International Accounting Standards. It may no longer be possible to claim the infrastructure renewals charge as a taxable expense. This would increase the tax payable in the next few years, although there would be no difference in the total tax payable over the life of the assets.

The tax payable is shown in Table 7.7.

Table 7.7: Corporation tax payable 2006-10 (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Corporation tax payable	£0.0m	£15.5m	£26.8m	£14.8m

Cash return on the regulatory capital value

This is the product of the RCV in each year and the allowed rate of return. We have also added the cost of embedded debt, which had a coupon above 4.6%.

Our regulatory capital value takes account of the overhang from Quality and Standards II and the capital expenditure required to deliver both the Ministers' 'essential' and 'desirable' objectives for the industry. The allowed level of capital expenditure also takes account of the unsubstantiated claim for efficiency by the former East of Scotland Water Authority.

Scottish Water will have to deliver a significant investment programme during this regulatory control period if it is to meet all of the objectives set by Ministers. This programme is set out in Table 7.8.

Table 7.8: Required investment programme (outturn prices)

Investment category	2006-07	2007-08	2008-09	2009-10	
Overhang from Quality and Standards II	£243.7m	£30.9m	£0.0m	£0.0m	
Infrastructure renewals expenditure	£88.6m	£91.2m	£94.0m	£96.8m	
Other investment (including additional retail investment)	£202.1m	£470.9m	£539.4m	£592.7m	
Total investment	£534.3m	£593.0m	£633.3m	£689.5m	

Asset disposals are not expected to be very material. Our estimates have taken account of the level of asset sales made by Scottish Water. We have also taken account of experience from south of the border.

Our assumptions are outlined in Table 7.9.

Table 7.9: Asset disposals and cash proceeds (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Asset disposals (historic cost net Book Value)	£1.0m	£1.0m	£1.0m	£1.0m
Cash proceeds from asset disposals	£1.0m	£1.0m	£1.0m	£1.0m

Revenue caps

The revenue that we propose to allow Scottish Water in each year of the regulatory control period is set out in Table 7.10. In line with the Ministerial Guidance, we have smoothed the change in revenue. We have estimated real increases using an assumed 2.5% increase in the retail price index (RPI).

Table 7.10: Revenue caps 2006-10

	2005-06 ¹³⁹	2006-07	2007-08	2008-09	2009-10
Operating costs		£272.1m	£277.6m	£283.9m	£293.8m
PPP charge		£122.4m	£124.8m	£129.5m	£135.8m
Current cost depreciation ¹⁴⁰		£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge		£88.6m	£91.2m	£94.0m	£96.8m
Cash return on the RCV ¹⁴¹		£148.9m	£163.6m	£178.9m	£195.7m
Embedded debt allowance		£33.8m	£32.3m	£30.7m	£29.1m
Tax		£0.0m	£15.5m	£26.8m	£14.8m
Calculated revenue		£852.9m	£916.2m	£974.5m	£1,018.2m
Financeability adjustment		£129.7m	£89.3m	£34.7m	£0.0m
Total revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Year on year increase (nominal)		1.82%	2.33%	0.36%	0.90%
Year on year increase (real)		-0.68%	-0.17%	-2.14%	-1.60%

The revenue caps set out above show that Scottish Water's overall financial health – as measured by the debt to RCV ratio – improves modestly over the regulatory control period.

In Table 7.11 we set out the value of each targeted ratio for each year of this regulatory control period.

¹³⁹ Revenue for 2005-06 was determined using a cash-based approach, we therefore do not break it into the components of an RCV-based approach.

¹⁴⁰ Includes depreciation on disposal of non-infrastructure assets.

¹⁴¹ Includes working capital adjustment.

Table 7.11: Financial performance 2006-10

Financial Ratio	Targeted value	2006-07	2007-08	2008-09	2009-10
Cash interest cover	Around 3 times	3.7	3.9	3.6	3.5
Adjusted cash interest cover	Around 1.6 times	2.5	2.6	2.2	2.0
Funds from operations: debt	Greater than 13%	15.9%	16.3%	14.1%	13.0%
Retained cashflow: debt	Greater than 7%	15.9%	16.3%	14.1%	13.0%
Gearing	Less than 65%	67.0%	64.6%	63.9%	63.8%

Public expenditure

The revenue caps set out above require Scottish Water to take on considerable new debt during the next four years. This net new debt counts as public expenditure. In the February¹⁴² Ministerial Guidance, Scottish Water was allowed £182 million of public expenditure a year. The Minister also allowed Scottish Water to carry forward any unused public expenditure from the 2002-06 regulatory control period.

The use of public expenditure is summarised in Table 7.12.

Table 7.12: Public expenditure 2006-10 (outturn prices)

		2006-07	2007-08	2008-09	2009-10
2002-06 carry over	£256.0m				
Available public expenditure at start of year (including carry-over)		£438.0m	£495.4m	£529.4m	£493.2m
Public expenditure used		£124.6m	£148.0m	£218.2m	£270.6m
Unused public expenditure at year end		£313.4m	£347.4m	£311.2m	£222.6m

It was not possible to increase the use of public expenditure and to comply fully with all of the cash-based financial ratios in each year.

We examined the impact on charges in the current and future regulatory control periods if we allowed Scottish Water to comply with all of the cash-based ratios except 'funds from operations divided by debt'. The rationale for allowing this ratio to be breached would be that Scottish Water is funded entirely by customer charges and debt and there is no indication that the Scottish Executive

may seek to require Scottish Water to pay a dividend on

Our analysis has shown that a further small reduction in real terms in the level of charges faced by customers in this regulatory control period would have been possible. However, this would have made increases above the rate of inflation more likely in the next period. It would also reduce the affordability of future investment programmes. We analysed the prospects for charges and public expenditure on the assumption that a further £2,100 million of investment would be required.

Table 7.13 summarises this analysis.

any retained earnings. From this standpoint, complying with this ratio could be regarded as challenging.

 $^{^{\}rm 142}$ See Guidance on principles of charging, Appendix 4.

Table 7.13: Effect of not complying with the funds from operations/debt ratio (outturn prices)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Revenue Required (full compliance) ¹⁴³	£983.7m (1.82%)	£1,005.5m (2.33%)	£1,009.2m (0.36%)	£1,018.2m (0.90%)	£1,063.3m (4.43%)	£1,110.5m (4.43%)	£1,159.6m (4.43%)	£1,211.0m (4.43%)
Revenue Required (not including funds from operations) ¹⁴⁴	£953.0m (-1.25%)	£941.1m (-1.25%)	£929.3m (-1.25%)	£917.7m (-1.25%)	£1,064.5m (16.00%)	£1,128.4m (6.00%)	£1,230.0m (9.00%)	£1,365.3m (11.00%)
Public Expenditure (full compliance) ¹⁴⁵	£124.6m	£148.0m	£218.2m	£270.6m	£192.7m	£184.4m	£221.7m	£278.8m
Public Expenditure (not including funds from operations)	£154.9m	£195.2m	£271.2m	£362.5m	£180.6m	£179.3m	£180.7m	£182.0m

We recognise that we will not have used all of the public expenditure available. However, we believe that it would not have been in the interests of customers to increase borrowing further in this regulatory control period. That may have resulted in a marginally lower charge profile today but would have led to less charge stability in the next regulatory control period. Our view is that such an approach would have been inconsistent with the Ministerial Guidance¹⁴⁶.

We also believe that the Scottish Executive's Environment and Rural Affairs Department should hold £40 million of the unused public expenditure in reserve. 147 This may be required to bridge the period between extra costs that are outside the control of management being incurred and the threshold for an interim determination. This lending should only be made available to Scottish Water with the agreement of the new Water Industry Commission.

Full details of how this might work out have still to be developed. However, there should be a requirement to lodge prior notification to the new Commission in advance of this request.

Revenue and investment comparisons with England and Wales

Revenue per connected property

Table 7.14 compares the revenue allowed to Scottish Water on a per connected property basis with that which is allowed to the water and sewerage companies south of the border.

Table 7.14: Estimated revenue per connected properties 2005-10 for all water and sewerage companies in Great Britain

	Average Revenue 2005-10 ^{148,149}	Average Properties ¹⁵⁰	Average Revenue per property
Scottish Water	£897m	2.30m	£389
Anglian	£812m	2.21m	£368
Welsh	£542m	1.30m	£417
Northumbrian	£514m	1.49m	£345
Severn Trent	£1,127m	3.50m	£322
South West	£361m	0.70m	£516
Southern	£550m	1.42m	£387
Thames	£1,333m	4.42m	£302
United Utilities	£1,238m	2.97m	£417
Wessex	£337m	0.82m	£411
Yorkshire	£700m	2.06m	£340

The allowed revenue for Scottish Water on an average per connected property basis is £389. In the comparisons above, Scottish Water benefits from a lower

¹⁴³ Full compliance in the last year of each regulatory control period (2010 and 2014).

¹⁴⁴ Public expenditure limit increases the amount of revenue required from customers.

¹⁴⁵ Public expenditure unused in the 2006-10 regulatory control period is carried forward to 2010-14.

¹⁴⁶ See 'Guidance on Principles of Charging', Appendix 4.

¹⁴⁷ We discuss this issue in detail in Chapter 6 of Volume 7.

¹⁴⁸ Ofwat did not disaggregate revenue or the number of properties on a year-on-year basis. Instead, it used the entire 2005-10 period. As such, Scottish Water's calculations also include 2005-06 revenue and properties for comparison purposes.

¹⁴⁹ Ofwat's final determinations use the 2002-03 price base, therefore revenue figures were indexed by the financial year average RPI to obtain 2003-04 prices.

¹⁵⁰ Simple average between water and waste water billed connections.

cost of capital than is available to the equity financed companies south of the border. If we were to adjust for the impact of the private sector cost of capital, Scottish Water's revenue per connected customer increases to £446. This would make Scottish Water's revenue per connected property the second highest in Great Britain.

Total level of investment

Total investment in this regulatory control period amounts to £2.1 billion (2003-04 prices) after efficiency. This is an increase of 12.4% in real terms and 27.3% in nominal terms from the 2002-06 regulatory control period. This investment programme is without precedent in Scotland.

The total investment to be delivered in Scotland stands comparison with the likely level of investment south of the border in the same period. This is illustrated in Table 7.15.

Table 7.15: Planned investment for Scottish Water and for the largest companies in England and Wales (2003-04 prices)

(Figures in 03-04 prices) ¹⁵¹	2005-06	2006-07	2007-08	2008-09	2009-10	Total (2005-10)	Total (2006-10)
Anglian	£271m	£325m	£353m	£315m	£282m	£1,545m	£1,275m
Severn Trent	£415m	£495m	£501m	£457m	£475m	£2,343m	£1,928m
Thames	£688m	£725m	£645m	£615m	£615m	£3,289m	£2,601m
United Utilities	£553m	£635m	£593m	£461m	£392m	£2,635m	£2,082m
Yorkshire	£357m	£318m	£309m	£295m	£247m	£1,526m	£1,169m
Scottish Water	£583m	£485m	£517m	£534m	£564m	£2,683m	£2,100m

¹⁵¹ Source: Ofwat RD07/05, 'Regulatory capital values 2005-10', 22 April 2005. Figures were deflated by COPI to 2003-04 prices.

Investment per connected property

Scottish Water's investment programme is very large relative to its total number of connected properties. This is shown in Table 7.16.

Table 7.16: Total investment per connected property in 2005-10 (2003-04 prices)

	Total investment (2005-10)	Average number of connected properties (2005-10) ¹⁵²	Total investment per connected property (2005-10)
Anglian Water	£1,545m	2.21m	£701
Dwr Cymru	£1,218m	1.30m	£937
Northumbrian Water	£891m	1.49m	£598
Severn Trent Water	£2,343m	3.50m	£669
South West Water	£811m	0.70m	£1,158
Southern Water	£1,663m	1.42m	£1,171
Thames Water	£3,289m	4.42m	£744
United Utilities Water	£2,635m	2.97m	£887
Wessex Water	£804m	0.82m	£981
Yorkshire Water	£1,526m	2.06m	£740
Scottish Water	£2,683m	2.30m	£1,164

Interim determinations and the logging up and down process

An interim determination is a reconsideration of a firm's price limits that could be undertaken between formal price reviews. The reconsideration is carried out in the light of a particular set of circumstances or factors outside management control that were not taken into account at the previous review. Either the firm or the regulator may initiate an interim determination.

Currently, under the outgoing regime (pursuant to the Water Industry (Scotland) Act 2002) the Water Industry Commissioner for Scotland provided advice to the Scotlish Ministers on charges. Ministers can commission advice whenever they considered it necessary. In this framework, there has been no need for a specific process for interim determinations since it has been for Ministers to judge when advice needed to be revisited.

When the provisions in the 2002 Act, which were inserted by the Water Services etc. (Scotland) Act 2005

are commenced, it will be the role of the new Water Industry Commission to ensure that Scottish Water delivers the objectives of Ministers at the lowest reasonable cost. Scottish Water has to be able to recover the costs of any unexpected expenditure during a regulatory control period that results from unforeseen circumstances outside management control (rather than from under-performance).

It is important to differentiate between cost problems which arise and are reasonably within the control of managers, and those that are genuinely outside the control of management. The regulatory framework needs to be able to respond in an effective and timely way to unexpected costs that are outside the control of management. This will be achieved through the interim determinations process. We have set out our view of the major uncertainties by publishing a list of notified items with this draft determination (see below).

It is, however, for the Scottish Executive to decide on an appropriate course of action if Scottish Water does not perform at the level assumed in the determination of charges as a result of factors that are within its control. Our view is that customers should not be asked to pay twice for the same outputs.

Examples of factors that we would consider to be within and outside the control of management are outlined in Table 7.17.

Table 7.17: Examples of factors within and outside the control of management

Within management's control	Outside management's control
Obtaining planning permission	Changes in planning law
Inflation risks caused by advancing or delaying the delivery of the investment programme	Capital inflation difference on planned schedule of investment delivery
	Legal changes
	Price increases caused by regulatory settlements for electricity (to the extent not captured in inflation indices)

We have set the same threshold¹⁵³ for an interim determination as that which is set by Ofwat for the companies in England and Wales. If the threshold is reached, either Scottish Water or the Commission could

¹⁵² Simple average between water and waste water connections.

¹⁵³ Effect must exceed 10% of allowed revenue when calculated as the NPV over 10 years for operating costs, 15 years for revenue or capital expenditure.

initiate the interim determination process. We noted that Ministers should be prepared to increase their lending to Scottish Water up to the maximum reserve of £40 million if the new Water Industry Commission agreed that the costs incurred were outside the control of management and that additional lending was an appropriate response. In this regard, we would note that there appears to be quite ambitious assumptions on the likely customer take-up of some outputs in the funded investment programme, which may reduce (perhaps entire ly) the need for Scottish Water to access this reserve public expenditure¹⁵⁴.

In the event that an interim determination is not triggered, any variances in costs that are outside the control of management would be taken into account at the next Strategic Review of Charges.

Notified items

The notified items for this draft determination are set out in Table 7.18.

Table 7.18: Notified items for the Strategic Review of Charges 2006-10

Notified	items

Inflation rates (COPI and CPI)

The definition of retail activities in the regulatory accounts

Changes in ministerial objectives for the industry

Any change in legislation that has an impact on Scottish Water's statutory

Changes in the numbers of metered customers from the 2004-05 baseline

Contractual status of overhang, and whether costs will increase by inflation

Corporation tax

Outcome of strategic drainage studies of the catchments for Meadowhead, Stevenston and Portobello

How we propose to deal with out-performance by Scottish Water

All of the UK economic regulators use an incentive-based approach to determining charges. Under this approach, the regulator analyses the scope for the regulated company to improve its performance and sets appropriate charge caps. A determined management may out-perform the determination of charges and, in doing so, will benefit shareholders (for private companies) or customers (as in the case of the not-for-

A key element of incentive-based regulation is ensuring that the regulated company faces a tight budgetary constraint. It is this pressure that will force management to seek to improve efficiency.

In the private sector, regulators rely on shareholders to exert pressure on management to out-perform efficiency targets. More recently, however, the creation of the not-for-dividend companies Glas Cymru and Network Rail has led regulators to consider the impact of incentive-based regulation on companies that do not have shareholders.

The founders and senior management of Glas Cymru made a commitment to create a reserve with the proceeds of out-performance. They also committed themselves to using some of the proceeds from out-performance to provide rebates to customers within the regulatory control period. Rebates were paid as soon as the company was in a strong financial position. Glas Cymru's customers have enjoyed two such rebates. We believe that from a customer perspective there is much to commend this approach.

In this draft determination, we have built on Glas Cymru's approach while taking full account of Scottish Water's particular circumstances. We set out our approach to handling out-performance in our second open letter to Scottish Ministers in May 2005.

Our view is that Scottish Water should be capable of outperforming the minimum acceptable level of performance that we have assumed in this draft determination. We would trust that Scottish Water would want to accept a lower charge cap in future years if it has been able to out-perform the determination of charges. As we explain later, foregoing part of the charges cap in one year does not mean that this may not be taken up later if the need arose.

dividend Welsh company, Glas Cymru). However, such out-performance will also raise the level of performance that is expected at future reviews. It is this 'ratchet' effect that has resulted in the significant efficiency gains that have taken place south of the border.

 $^{^{\}rm 154}$ For example, the lead pipe replacement programme.

Clearly, it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the exceptional performance. This will require the Executive, Scottish Water and the quality regulators (the Drinking Water Quality Regulator and the Scottish Environment Protection Agency) to establish satisfactory ways to measure delivery of specified outputs. The success of Scottish Water's management should be judged by the extent to which it delivers, as a minimum, the outputs that we have financed in this draft determination.

The detail of any incentives for Scottish Water's managers would be a matter for the Executive and Scottish Water to settle in the particular context of a publicly owned business. Our view is that, from a customer perspective, any approach would need to be founded on the principle of bonuses only being paid once Scottish Water's performance had exceeded the minimum acceptable level of performance set in the final determination of Scottish Water's charges. In our view, there will need to be a direct and transparent link, published in advance, between the bonuses that are available to senior management and improvements beyond the minimum acceptable level of performance.

Risk analysis

Our risk analysis has identified the likelihood that the Scottish Executive could face an incidence of underperformance by Scottish Water that was within the control of management (and hence an interim determination would not be appropriate). It has also identified the risk that an interim determination may be required.

In this draft determination we have made a number of assumptions. The most material of these assumptions are set out in Table 7.19. These are separated into factors that are within and those that are outside the control of management.

Table 7.19: Factors inside and outside management control

Within management control	Outside management control
Operating costs: • efficiency • efficiency and incidence of new	Consumer prices index (CPI)
efficiency and incidence of additional baseline operating costs	
Capital expenditure: • efficiency scope of agreed programme	Construction outputs pricing index (COPI)
	Exogenous shocks: change in outputs required changes in legislation other factors likely to trigger an interim determination

We have measured exogenous shocks with reference to the frequency and outcome of interim determinations that have taken place south of the border.

Results of our risk analysis (costs that are within the control of management)

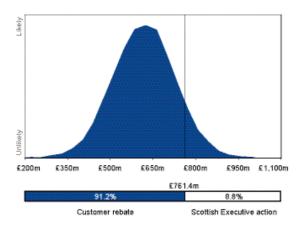
We have calculated the likelihood that Scottish Water should be in a position to deliver rebates to customers from the level of charge caps that we have set in this draft determination ¹⁵⁵. The converse is the potential requirement for the Scottish Executive to have to manage under-performance in relation to the draft determination.

 $^{^{\}rm 155}$ This is discussed in more detail in Chapter 8 of Volume 7.

We have modelled a range of options where Scottish Water's efficiency varies from that of a below average company south of the border to an average company south of the border. Figure 7.1 shows that the most likely outcome is that Scottish Water would require a cumulative total of £618 million of new debt by the end of 2009-10. This outcome would be consistent with rebates to customers during the regulatory control period, since the allowance in charge limits for new debt is £761 million. The analysis also indicates that the risk of the Scottish Executive having to address a failure to perform at least in line with the draft determination is low, at less than 9% and this could be if Scottish Water's performance was significantly below that of a poor performance company south of the border¹⁵⁶.

In our view this highlights just how stable and predictable the water industry is. As we will see when we look at the impact of exogenous shocks and inflation (from which Scottish Water is fully protected because of the interim determination process) the main financial risks are borne by customers.

Figure 7.1: Impact of operating and capital expenditure risks and inflation risks (independently) on the likelihood of customer rebates or of Scottish Executive action



Results of our risk analysis (costs that are outside the control of management)

We have calculated the likelihood that externally driven costs (inflation or an exogenous shock) could be sufficiently material to warrant an interim determination.

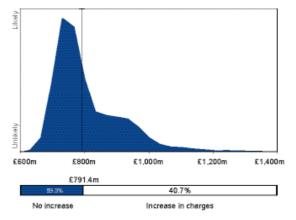
We applied a pessimistic assumption that the capital programme would be equal to the higher estimate that we have used in setting prices (£2.1 billion at 2003-04 prices). We set out the results of combining uncertainties in CPI, COPI and our assumed risk profile of exogenous¹⁵⁷ shocks in Figure 7.2. This shows the expected position in 2009-10. The chance of Scottish Water incurring unforeseen expenses that may breach the materiality threshold for an interim determination is around 41%.

It is important to put this risk into perspective. It says that if:

- the capital programme outturns at £2.1 billion;
- Scottish Water experiences exogenous shocks similar to those that have occurred south of the border¹⁵⁸; and
- there are adverse swings in CPI and COPI relative to RPI;

then there is still around a 59% chance that an interim determination to increase prices would not be required. Again, this would seem to emphasise the predictable nature of the water and sewerage industry.

Figure 7.2: Impact of factors outside management control on the likelihood of breaching new borrowing allowed in price limits – high capital investment programme scenario



¹⁵⁶ Our analysis in Volume 5 suggests that a capital programme of £2.1 billion post efficiency was reasonable. This risk analysis assumes that the capital programme is £2.1 billion and that Scottish Water operate in an effective regulatory framework with appropriate incentives to perform.

These shocks (scaled to the size of Scottish Water) range from £30 million to £220 million.

¹⁵⁸ See Chapter 8 of Volume 7.

Calculation of wholesale revenue

The wholesale revenue cap includes both the revenue from the retail charge caps set for household customers and the purely wholesale revenue that will be paid to Scottish Water by its retail subsidiary.

We used the accounting method¹⁵⁹ to calculate the costs that Scottish Water's retail subsidiary would incur in serving non-household customers. Scottish Water and its retail subsidiary are both likely to incur additional costs as a result of it becoming separate businesses. These costs are likely to include carrying out new activities, or carrying out existing activities under different operating conditions. However, there is also likely to be increased scope for efficiency.

One of the most important new costs would be the cost of capital of the retail subsidiary. This has to be set at a level that would not disadvantage potential new entrants. We therefore commissioned Ernst & Young LLP to advise on an appropriate cost of capital for Scottish Water's retail subsidiary 160. They advised that a reasonable weighted average cost of capital (WACC) for the new retail business is between 8.2% and 9.4% nominal pre-tax. The cost of equity is assumed to be 12% and the cost of debt is assumed to be 6%. This compares with our hybrid WACC of 4.13% for Scottish Water's core business.

Summary of costs

The increase in total costs (core and retail combined) as a result of the separation of the retail activities is set out in Table 7.20.

Table 7.20: Impact on total costs of separation of retail activities (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Increased operating costs – retail	£0.73m	£0.80m	£3.93m	£3.95m
Increase operating costs – wholesale	£0.26m	£0.22m	£1.12m	£1.09m
Increased cost of capital	£3.15m	£3.72m	£3.83m	£3.83m
Increased tax	£0.50m	£0.50m	£0.50m	£0.50m
Wholesale efficiencies 161	-£0.57m	-£2.63m	-£4.28m	-£5.94m
Retail efficiencies 162	£0.00m	£0.00m	-£2.45m	-£2.35m
Total additional operating expenditure	£4.08m	£2.60m	£2.65m	£1.08m

We have added these costs to the financial model in setting the revenue cap.

The revenue cap for the wholesale business is set out in Table 7.21.

 $^{^{\}rm 159}$ This method was described in Volume 3 of our methodology consultation.

¹⁶⁰ Ernst & Young LLP, 'Cost of capital report for the Water Industry Commissioner for Scotland' (May 2005). See Appendix 8.

We believe that there is scope to accelerate the improvement in operating cost efficiency in both the wholesale and retail business after separation. There is evidence from both the electricity and gas industries that disaggregation of the value chain has identified a number of activities (conducted by the vertically integrated monopoly) that were not adding value. Separate studies by Professor Littlechild and Cambridge Econometrics (highlighted in Volume 4) have shown the improvement in operating cost efficiency that can be achieved through separation. Our estimates assume that less improvement is available in the Scottish water industry than the ex post analysis of the electricity industry might suggest.

¹⁶² As above.

Table 7.21: Revenue cap for the wholesale business (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total non-household revenue	£326.7m	£330.1m	£327.1m	£329.4m
Retail Margin	-£32.72m	-£35.5m	-£36.4m	-£36.3m
Non-household wholesale revenue	£294.0m	£294.6m	£290.6m	£293.2m
Household revenue	£642.04m	£661.2m	£667.5m	£673.8m
Secondary revenue	£13.9m	£14.2m	£14.6m	£15.0m
Total Revenue	£949.9m	£970.1m	£972.8m	£982.0m

Introduction of tariff baskets

We use tariff baskets to translate the revenue cap into retail charge caps. We have established ten tariff baskets to cover the core services provided by Scottish Water. These tariff baskets will ensure that the removal of the £44 million cross subsidy is as transparent as possible. The tariff baskets should also allow customers to understand more clearly the implications of this draft determination on their bills.

Calculating the retail charge cap

The charge cap is the weighted average increase in tariffs within a basket. It is therefore the maximum amount by which tariffs on average can increase within a tariff basket.

In this draft determination we have set retail charges relative to the retail price index. This is the same index that Ofwat uses to set charge limits for the water and sewerage companies in England and Wales. Scottish Water therefore has the same protection against financing inflation risk as the companies south of the border.

The retail charge cap regime applied in Scotland will mirror that which is used in England and Wales. Scottish Water would be permitted to carry over any unused change in charges from one year to following years. Unused charge cap is denoted with the letter 'u'. The real charge cap is denoted by the letter 'K'.

The maximum charge cap is determined as follows:

Charge Cap RPI + K + u

In this draft determination we have used the following ten tariff baskets:

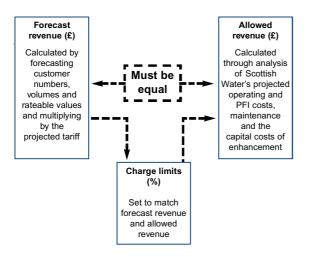
- household unmeasured water;
- · household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water with 25mm connection or greater;
- measured waste water with 25mm connection or greater;
- surface water drainage (excluding unmeasured household);
- trade effluent;
- standard metered water connection 20mm; and
- standard metered waste water connection 20mm.

We have set a charge cap in the form RPI+K for each basket.

Retail charge caps

Figure 7.3 illustrates the charge setting process. We firstly calculate charge limits for both Scottish Water's core functions and its retail subsidiary combined. We then calculate separate charge limits for Scottish Water's core (wholesale) function.

Figure 7.3: How charge limits are set¹⁶³



The charge limits for non-household customers will limit the increases in charges that the new retail subsidiary of Scottish Water can levy on its customers. We expect the new Commission to make it a licence condition of the new retail subsidiary that it agrees to be bound by these charge caps. The non-household charge caps will also apply to Scottish Water in its role as the 'supplier of last resort'.

We have also set limits on the increases in charges that Scottish Water can charge its own and future retailers of water and waste water services to non-household customers.

The K factor for each tariff basket, against which we will monitor Scottish Water, is shown in Table 7.22.

Table 7.22: The K factor for each tariff basket

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	-0.5%	-0.5%	-2.5%	-2.5%
Household unmeasured waste water	-0.5%	-0.5%	-2.5%	-2.5%
Non-household unmeasured water	-2.5%	-2.5%	-4.6%	-2.5%
Non-household unmeasured waste water	-2.5%	-2.5%	-4.6%	-2.5%
Measured water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Measured waste water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Surface water drainage (excluding unmeasured domestic)	-2.5%	-2.5%	-4.6%	-2.5%
Trade effluent	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered waste water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Overall weighted average price increase	-1.2%	-1.2%	-3.2%	-2.5%

Charge limits for Scottish Water's core wholesale business

There is no precedent within the water and sewerage industry in the UK for the setting of wholesale charges. We believe therefore that it is important that Scottish Water has the opportunity to decide how it wants to set its wholesale tariffs¹⁶⁴. We will therefore ask Scottish Water to identify wholesale tariffs as part of the scheme of charges process for 2006-07. These non-household wholesale charges should be consistent with the implied wholesale revenue cap for 2005-06.

We consider that as the market develops, Scottish Water wholesale may wish to rebalance tariffs to better reflect the underlying costs. We have therefore set one K factor for the entire non-household wholesale business.

The revenue cap, expected growth in the non-household customer base and the corresponding K factor are set out in Tables 7.23 and 7.24.

Table 7.23: Forecast non-household wholesale revenue resulting from changes in the customer base (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Forecast non-household wholesale revenue	£322.7m	£326.7m	£330.1m	£333.9m	£336.3m
Percentage change		1.3%	1.0%	1.2%	0.7%

¹⁶³ The charge limits will influence the individual tariff within each basket.

¹⁶⁴ Scottish Water did not provide any detailed information on its plans for wholesale tariffs in its second draft business plan.

Table 7.24: Non-household wholesale charge limits (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Previous year revenue	£290.3m	£294.0m	£294.6m	£290.6m
Percentage change due to customer base changes	1.3%	1.0%	1.2%	0.7%
Revenue base for year	£294.0m	£297.0m	£298.0m	£292.8m
Allowed revenue	£294.0m	£294.6m	£290.6m	£293.2m
(Allowed revenue / Revenue base) minus 1	0.0%	-0.8%	-2.5%	0.1%
The K factor (subtract RPI)	-2.5%	-3.3%	-5.0%	-2.4%

The impact of charge limits on customers' bills

In the 2006-10 regulatory control period, all household customers (except second home owners and some higher banded households who received transitional relief) will see a reduction in their tariffs in real terms. No group of non-household customers that is currently paying tariffs within Scottish Water's scheme of charges will face a real increase in the tariffs they pay.

We use a number of standard customers to monitor the impact of our charge caps on individual types of customers.

Table 7.25 summarises the impact of our charge caps on each of our standard customers.

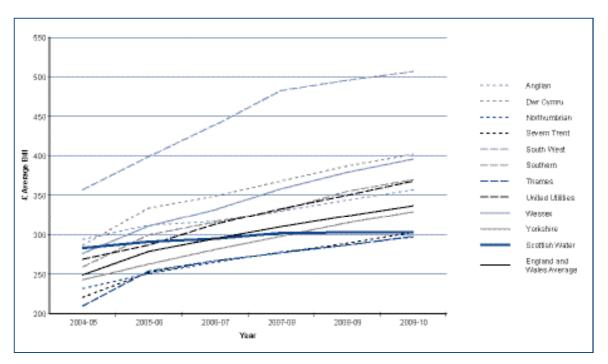
Table 7.25: Effects on all standard customers' bills 2005-06 to 2009-10

Customer name	Customer type	Total bill 2005-06	Nominal bill 2009-10	% change in bill
Band D unmeasured household	Unmeasured household	£347.76	£361.81	4.04%
Large house	Measured household	£652.85	£639.14	-2.10%
Small newsagent/grocer	Unmeasured household	£304.07	£297.68	-2.10%
Local hairdresser	Unmeasured household	£379.53	£371.56	-2.10%
Sports club	Unmeasured household	£518.91	£508.01	-2.10%
Supermarket	Unmeasured household	£3,427.11	£3,355.14	-2.10%
Warehouse	Measured household	£306.38	£299.95	-2.10%
High school	Measured household	£4989.30	£4,884.52	-2.10%
Hotel	Measured household	£34,326.75	£33,605.89	-2.10%
Convenience store	Measured household	£545.53	£534.08	-2.10%
Garage	Measured household	£854.85	£836.90	-2.10%
Large restaurant	Measured household	£4,876.79	£4,774.38	-2.10%
Large office	Measured household	£29,876.62	£29,249.21	-2.10%
Retail group	Measured household	£87,850.30	£86,005.45	-2.10%
Food manufacturer 1	Measured household	£108,427.50	£106,150.52	-2.10%
Food manufacturer 2	Measured household	£223,671.00	£218,973.91	-2.10%
Large manufacturer	Measured household	£421,631.75	£412,777.48	-2.10%
Brewers	Measured household	£579,068.00	£566,907.57	-2.10%
Bakery	Trade effluent	£294.24	£288.06	-2.10%
Clothing manufacturer	Trade effluent	£5,560.53	£5,443.76	-2.10%
Abattoir	Trade effluent	£118,796.65	£116,301.92	-2.10%
Electronics business	Trade effluent	£211,029.12	£206,597.51	-2.10%
Printers	Trade effluent	£15,240.28	£14,920.24	-2.10%
Distillery	Trade effluent	£67,163.59	£65,753.16	-2.10%

We can compare the projected average household charge for 2006-10 for each of the water and sewerage companies in England and Wales with Scottish Water's expected average household bill. This comparison is shown in Figure 7.4¹⁶⁵. It shows that by 2009-10 the average household bills in Scotland will be amongst the lowest in England and Wales.

¹⁶⁵ Scottish Water benefits from the lower cost of capital. Customers would likely pay a little more if the level of service provided in Scotland was the same (in all respects) as in England and Wales.

Figure 7.4: Comparison of household bills in Scotland with those in England and Wales 2006-10



Outlook for 2010 to 2014

We have set indicative charge caps for the period 2010-14. These charge caps are broadly in line with retail price inflation.

The indicative charge caps are set out in Table 7.26.

Table 7.26: Indicative charge caps for 2010-14

Year	2010-11	2011-12	2012-13	2013-14
K Factor ¹⁶⁶	0.0%	0.0%	0.0%	0.1%

These charge caps assume the following:

- Scottish Water achieves, but does not beat, its targets for the 2006-10 regulatory control period;
- an investment programme during the 2010-14 regulatory control period of £1,800 million in real prices;
- capital inflation of 3%;

- there is no change in the key financial ratios; and
- public expenditure of £182 million a year is available.

The actual charge caps for 2010-14 will depend on Scottish Water's performance in the 2006-10 regulatory control period and on decisions of the Scottish Ministers with regard to their investment objectives and the level of public expenditure that they are prepared to make available.

Summary

This draft determination offers the prospect of falling charges in real terms for almost all customers. Most household customers will see their charges fall by over 4% in real terms. Average household bills in Scotland will on average be amongst the lowest in the UK. In reducing charges in real terms, we have not compromised the prospects for future charges.

It is also important to note that this draft determination funds an investment programme of £2,100 million in

¹⁶⁶ Adjustment in tariff basket income relative to the rate of retail price inflation.

2003-04 prices. This is the largest investment programme in Great Britain on a per connected property basis and the second largest programme in absolute terms. Only Thames Water, which has approximately twice as many customers as Scottish Water, has a larger investment programme.

Customers in Scotland pay lower bills than would otherwise be necessary because Scottish Water has access to a lower public sector cost of capital. Bills could be more than 10% higher if this public sector debt were not available. Customers are also beginning to benefit from the improvement in efficiency that Scottish Water has achieved in its first three years. Over the next few years, if Scottish Water continues to improve its efficiency, average household bills will continue to be among the lowest in the UK.



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The Strategic Review of Charges 2006-10: The draft determination

Introduction and background

volume 2

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

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Executive summary

Introduction

The current Strategic Review of Charges will set price limits for the 2006-10 regulatory control period. This will be the first time that this Office will determine rather than advise Ministers on the appropriate level of charges. We have now collected and analysed a significant amount of information both from Scottish Water and other sources. In this draft determination we present the preliminary conclusions of the Strategic Review of Charges. There will now be a period until 23 September 2005 during which stakeholders can comment on the charge caps we have suggested are appropriate. The final charge determination will be published at the end of November 2005 by the new Water Industry Commission. The maximum charges under this determination will take effect from April 2006.

Scottish Water remains in the public sector, and is accountable to the Scottish Parliament through the Scottish Ministers. In May 2004, Ross Finnie, the Minister for Environment and Rural Affairs, wrote to both the Chairman of Scottish Water and to this Office in order to commission work on the Strategic Review of Charges 2006-10.

This was followed in February 2005 with Ministerial Guidance on:

- what Scottish Water was to achieve during the review period 2006-10;
- the principles that this Office should apply in setting charge limits for the period; and
- the borrowing that is likely to be available to Scottish Water during the review period.

Role of the Water Industry Commissioner for Scotland

Part II of the Water Industry Act 1999 created the post of the Water Industry Commissioner for Scotland and this Office was established on 1 November 1999. The Commissioner's primary role is to promote the interests of customers of Scotlish Water. One of the most important duties is to advise the Scotlish Ministers on

the amount of revenue that Scottish Water needs to fund its investment programme and meet the required levels of service.

Since this Office was created in 1999, the scope of our activities has broadened. In our first two years of operation we concentrated on the first full Strategic Review of Charges (which covered the period 2002-06) and on collecting the information that was essential to that review. Gradually our ongoing monitoring of Scottish Water's performance has taken on greater significance. This monitoring role ensures that customers receive improved value for money and can be confident that the benefits of increased investment are realised.

The Water Services etc. (Scotland) Act 2005 further develops the role of this Office. The Act establishes a Commission in place of a single Commissioner. It also sets up a framework for retail competition for non-household customers. This Office will assume the role of licensing authority. These changes are further discussed below.

The Strategic Review of Charges 2002-06

In the Strategic Review of Charges 2002-06, we advised that if the industry met the challenges it faced, then by 2006 customers could expect that their bills would not have to increase in real terms in order for them to enjoy an environmentally and financially sustainable service. Scottish Water has made a solid start in meeting the challenges that were set in the 2002-06 Strategic Review. It is this significant improvement in performance that underpins the relatively positive price outlook contained in this draft determination of charges.

Principal aims of the Strategic Review of Charges 2006-10

Customers will rightly expect us to have built on progress since the last Strategic Review of Charges. We have set charges that are sufficient, but no more than sufficient, to deliver the required level of service to customers.

The principal aims of this Strategic Review are to ensure that:

- charges are set at the lowest reasonable level that is consistent with the delivery of the Ministers' objectives for the industry; and
- Scottish Water further narrows the gap between its performance and that of the companies south of the border.

The role of regulation

Monopolies can exist in both the public and private sectors. An effective monopoly is present when most, if not all, customers do not have any real choice and when the dominant market supplier determines the terms and price of supply.

While a few companies may have some choice in their arrangements for a water and sewerage service, Scottish Water is an effective monopoly. Similarly, in England and Wales, although an industrial or commercial customer in one area can request a service from a supplier in an adjoining area, in most cases this is not economically viable.

The purpose of regulation is to seek to ensure that such monopoly businesses act in the customer interest. Regulators can act to encourage the supplier to provide a better level of service to customers (customer service regulation) or to reduce costs while maintaining the level of service (economic regulation).

Types of regulatory frameworks

There are three main regulatory models:

- Cost-of-service (rate of return) regulation: in this
 model the regulator sets the return that can be
 earned on investment by companies. This enables a
 company to recoup, at a set rate, the costs and
 investments that it has put in to provide the services
 provided these are in line with the agreed budget.
 Cost-of-service regulation includes no incentive to
 minimise costs or to avoid 'gold-plating' of assets.
- **Price cap regulation:** price cap regulation (RPI-X) sets the maximum prices that companies can charge

for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to improve returns to the shareholder or, in the case of Glas Cymru¹, deliver the rebates to customers' bills that were promised by management.

• Franchise regulation: under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

How economic regulation differs in the public sector

All UK economic regulators adopt an incentive-based approach to determining charges. The analysis is complex and thorough, but essentially the regulator analyses the scope for improvement in performance.

A determined management may out-perform the targets and in doing so will benefit the shareholders (private companies) or customers (Glas Cymru), but such out-performance will also raise the level of performance expected at future reviews. It is this 'ratchet' approach that has resulted in the significant efficiency gains south of the border.

Regulators normally rely on shareholders to exert pressure on management to out-perform efficiency targets. More recently, however, the creation of not-for-dividend companies (such as Glas Cymru and Network Rail) and the introduction of regulation to public sector companies (such as Scottish Water and Royal Mail) has led regulators to refine their approach.

Regulators have, in general, concluded that incentivebased regulation can be used to regulate the not-fordividend or public sector companies. Obviously they cannot rely on shareholder pressure to improve value for money to customers. This has required the regulators to focus on corporate governance and incentive frameworks.

In regulating the water industry in Scotland, we want to ensure that we take full advantage of the relatively cheap

¹ Glas Cymru is a not-for-profit company limited by guarantee which acquired Welsh Water in May 2001.

government borrowing that is available. At the same time, we are mindful not to reduce the impact of the tight budgetary constraint on current management or to increase bills for future customers disproportionately.

In the private sector, there exists a contractual relationship between the Government and the private utilities. Each utility has a licence to operate that requires it to meet standards of operation that are considered appropriate in terms of social, environmental, and public health policy objectives. The economic regulator takes account of all such issues that arise from legislation or other government guidance when determining the outputs that are to be delivered, and then sets the charge limits accordingly. Thereafter, he depends on shareholder pressure to ensure that these are delivered as efficiently as management can achieve, and simply has to monitor performance to ensure that the defined standards are properly achieved.

In the public sector, the regulator has to assess the lowest reasonable overall cost of delivering the objectives set by the Scottish Ministers. He cannot rely on the presence of market forces to deliver efficiency.

Regulation of Scottish Water as a public sector organisation

We use comparative analysis to promote continued improvements in customer service standards, environmental and public health compliance and financial performance. Experience from other utilities and from the water industry south of the border has shown that this can bring significant benefits to customers and the environment through lower costs, improved environmental and water quality standards and better customer service. Our approach is similar to that employed by other regulators, including the Office of Water Services (Ofwat), which regulates the water and sewerage companies in England and Wales.

If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower charges than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital.

Although direct comparisons can be difficult, a comparison with Ofwat's allowed cost of capital is instructive.

Ofwat's allowed cost of capital for the period 2005-10 is 5.10% real post-tax for the water and sewerage companies. In contrast, the weighted average interest rate for new loans taken out by Scottish Water since its creation was 4.16% nominal pre-tax (equivalent to 0.41% real post-tax). We have allowed Scottish Water a slightly higher cost of capital (comprising a 4.6% nominal pre-tax return on debt and a 3.22% nominal pre-tax cost of customer retained earnings). We estimate that Scottish Water's customers probably benefit by more than £100-£140 million a year as a result of this saving on the annual cost of capital. This saving is likely to increase over time if Scottish Water continues to enjoy access to public borrowing.

It is, however, important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently. We have proposed that a mechanism is put in place that compensates customers for the risks that they have borne.

We have limited the risk to customers of Scottish Water by adopting a prudent approach to the financing of Scottish Water's activities. This is in line with the Ministerial Guidance on the principles of charging. The final determination should be seen as an agreement between customers and Scottish Water about the level of service that will be provided during the period.

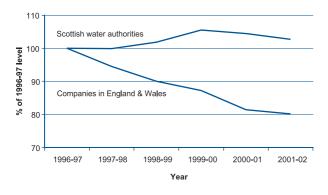
We believe that incentive-based regulation will benefit customers by ensuring that the business has an incentive to improve its efficiency further and more quickly than if we simply set targets, the achievement of which becomes the only objective.

For incentive-based regulation to work, it is essential that managerial incentives are available only for out-performance of targets, not for progress towards them. It is at least equally important that, in future, customers are not asked to pay twice for the agreed level of service. We are pleased that the Minister has recognised the importance of a tight budgetary constraint in the Ministerial Guidance².

How economic regulation of the Scottish water industry has already benefited customers

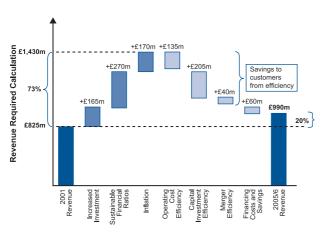
In their last years of operation the three former water authorities were becoming less efficient at a time when the industry in England and Wales continued to improve its performance. This is illustrated in Figure 1.

Figure 1: Trends in base operating costs of predecessor authorities 1996-97 to 2001-02



The scope for efficiency that we identified reduced the required increase in average prices from some 73% to a still significant, but more acceptable, 20%.

Figure 2: The scope for efficiency and other savings



Paragraphs 20 and 21 of the Ministerial Guidance of February 2005.

The actual level of operating costs inherited by Scottish Water was some £20 million higher than expected when we completed the Strategic Review of Charges 2002-06. We now expect that Scottish Water will have cut costs by some £145 million in real terms during the regulatory control period 2002-06. Scottish Water has done well over the last four years and these savings will continue to benefit customers in the period 2006-10. Total real operating cost savings will be greater than projected in our advice to Ministers.

The regulatory framework

The regulatory framework for the water industry in Scotland is broadly similar to that in England and Wales. There are separate organisations which are responsible for customer service and economic regulation; environmental protection; and safeguarding public health.

We described the role of the Water Industry Commissioner for Scotland above. The other principal agencies that are responsible for representing stakeholders' views and regulating Scottish Water are described below.

The Water Customer Consultation Panels (WCCPs)

The Water Industry (Scotland) Act 2002 created five Water Customer Consultation Panels across Scotland to represent the views and interests of customers of Scottish Water in the areas covered by the Panels. The Panels are independent of Scottish Water and of other agencies, including the Water Industry Commissioner.

The Drinking Water Quality Regulator (DWQR)

The role of the Drinking Water Quality Regulator for Scotland was established by the Water Industry (Scotland) Act 2002. The DWQR provides an independent check that Scottish Water is complying with the drinking water quality regulations. These regulations reflect European Union and other statutory standards.

The Scottish Environment Protection Agency (SEPA)

The Scottish Environment Protection Agency is responsible for a range of activities, including the following.

- Regulating discharges to rivers, lochs, estuaries and coastal waters from industry, sewage treatment works, fish farms, septic tanks, etc.
- Protecting and improving the water environment, including River Basin Management Planning under the Water Environment and Water Services Act.

Changes in the regulatory framework

There have been a number of changes to the legislative framework since the last Strategic Review.

The Water Industry (Scotland) Act 2002

The Water Industry (Scotland) Act 2002, which had the principal function of establishing Scottish Water, also limited the function of this Office to promoting the interest of customers of Scottish Water's core business. As a result, the current Strategic Review of Charges focuses only on Scottish Water's core activities of providing water and sewerage services to customers in Scotland.

The Water Services etc. (Scotland) Act 2005

In 2005, the Water Services etc. (Scotland) Act further strengthened the regulatory framework.

The Act has two main functions.

It creates a Water Industry Commission to replace the current Water Industry Commissioner. The Commission will have the power to determine (rather than to advise Ministers on) the maximum level of charges required to ensure that the objectives of the Scottish Ministers can be met at lowest reasonable cost. It introduces a framework for competition in the water industry that is consistent with the social, environmental and public health objectives of the Scottish Ministers.

Powers of determination

In England and Wales, Ofwat decides on the appropriate level of prices for the privatised companies south of the border after taking account of guidance that it receives from the Department for Environment, Food and Rural Affairs (DEFRA) and the Welsh Assembly Government. The Water Services etc. (Scotland) Act 2005 strengthens the regulatory framework for the water industry in Scotland, and brings the regulatory framework in Scotland more into line with England and Wales.

Broadly, a key function of regulators is to determine the charges levied by regulated companies. As a counterbalance to the powers of determination, Scottish Water, like other regulated companies, will have a right of challenge. There are two possible avenues for such challenges – the Competition Commission and judicial review.

If a regulated company disputes the regulator's price limits, it can require the regulator to refer the determination to the Competition Commission. The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators.

In the UK, decisions of public bodies are generally subject to judicial review. In principle, the purpose of judicial review is to protect citizens from abuse by ensuring that the powers and duties of government and other public bodies are exercised properly and lawfully.

The Water Industry Commission for Scotland

The Commission will comprise a non-executive Chairman and four other non-executive members. The Chief Executive will also be a member of the

Commission. This will bring regulation of the water industry in Scotland more into line with the regulation of other utilities in the UK.

The Commission will have the power to determine caps for Scottish Water's charges for core services within a policy framework that is set by Ministers. It is important to recognise that Ministers retain responsibility for setting Scottish Water's objectives and for the principles that should apply in setting Scottish Water's charges. The Act clarifies roles and responsibilities.

Introducing a framework for competition

The Act includes provisions requiring the Water Industry Commission to introduce a regime to license retail competition for 'non-household' (business and commercial) customers. We propose that the licensing regime should be in place in Scotland by April 2008.

The key provisions relating to competition in the Act are as follows:

- Prohibitions on common carriage and on the provision of water and sewerage services to households by anyone other than Scottish Water.
- A duty on Scottish Water to establish a separate retail business in accordance with the requirements of Ministers.

The approach taken in the Act differs from that which has been introduced south of the border. In England and Wales, the Government decided to allow 'common carriage' but to phase the introduction of competition through the use of thresholds. The Government in England and Wales believes that common carriage raises practical issues for the incumbent water provider relating to how to manage the impact of new entrants gaining access to its infrastructure.

Establishing a licensing regime

The Act introduces two types of licence: one for the retail of water services and one for the retail of waste water services.

The Act places a duty on the Commission to monitor compliance with the terms and conditions of licences and to take any action necessary to ensure compliance. It is important that retailers pay a fair wholesale price that disadvantages neither businesses nor households. This will be achieved through the determination of wholesale charge caps.

Retail subsidiary of Scottish Water

The Act imposes a duty on Scottish Water to establish a retail subsidiary in accordance with the requirements of Scottish Ministers. This will clearly separate Scottish Water's statutory and licensed activities. The Scottish Water retail business will be in direct competition with other retailers. Scottish Water must not use or be thought to be using its position as sole provider of wholesale services to put competitors of its retail subsidiary at a disadvantage. The retail arm will be subject to the same regulation as other retailers, and must be treated by Scottish Water's wholesale business in the same way as other retailers.

One of the key challenges of this Strategic Review of Charges 2006-10 has been to set reasonable wholesale and retail charge caps. There has been no precedent in the water industry for the assessment of charge caps for the wholesale service. This review has set retail charge caps for household customers and retail and wholesale charge caps for the 'non-household' sector. In effect this has required us to decide the appropriate cost and profit of a retailer (ie the difference between retail prices and wholesale prices).

The overall level of wholesale charges is critical. If they are too high, new entrants will not be able to cover their costs and consequently will not enter the market. If they are too low, the core business of Scottish Water would suffer and retailers could make excessive profits.

We have sought to involve stakeholders so that all interested parties can understand how we set the wholesale charge. We did this by outlining a very detailed work plan for the Strategic Review of Charges 2006-10³. We also arranged a number of stakeholder information days, as well as four licensing information days.

^{3 &#}x27;Our work in regulating the Scottish water industry: setting out a clear framework for the Strategic Review of Charges 2006-10', July 2004.

Additional powers to WCCPs

The Water Services etc. (Scotland) Act 2005 also transfers the responsibility for dealing with customer complaints from the Water Industry Commissioner for Scotland to the Convenor of the WCCPs. This responsibility sits better with the WCCPs, as the organisation responsible for representing the interests of customers.

Other inputs to the Strategic Review of Charges 2006-10

This section describes other major factors, in addition to the legislative changes outlined above, that have influenced this draft determination.

Better Regulation Task Force

The Better Regulation Task Force was established in 1997. It is an independent body, sponsored by the Cabinet Office, that advises the Government on action to ensure that regulation, and its enforcement, accord with the five Principles of Good Regulation. The Better Regulation Task Force has recommended that regulators should adopt five principles of good regulation in their approach to price setting: proportionality, accountability, consistency, transparency and targeting.

As part of our commitment to these principles, we have published all of the key information submissions that we have received from Scottish Water, as well as the tools that we have used to complete our analysis, including our financial and tariff basket models.

Ministerial Guidance

The Ministerial Guidance on the objectives for the water industry in Scotland was an important input to the Strategic Review of Charges. It provided information about the investment priorities that must be delivered and the principles of charging that should underpin the determination. The statement also set the borrowing limits that apply (or are likely to apply) during the four-year regulatory control period.

This draft determination has followed the terms of the original commissioning letter and subsequent Ministerial Guidance very closely.

Ministers may provide further guidance at the end of August 2005 in response to this draft determination of charges.

Regulatory returns and letters

Information is critical to effective regulation. We request information through a series of regular information returns and through regulatory letters. These regulatory requests can either be specific one-off requests or may initiate an additional regular request for information.

Scottish Water's business plans

We set out the timetable for the Strategic Review of Charges in the summer of 2004. An important element of this timetable was the submission of two business plans by Scottish Water. We issued detailed guidance to Scottish Water on the scope to be covered and information to be included in these business plans. These business plans were submitted by Scottish Water in October 2004 and April 2005.

Implications of the changing framework

This draft determination has built on the solid foundation that we created in our 2002-06 Strategic Review. For this Review, we have been able to carry out more thorough analysis because we have access to better information.

The regulatory framework continues to evolve. We have introduced a Reporter and now publish both the Annual Return provided by Scottish Water and regular reports on Scottish Water's performance.

In this draft determination we have endeavoured to make sure that the way we have benchmarked Scottish Water's performance is easier to understand. This has involved three main changes:

- a move towards the regulatory capital value (RCV) method of price setting;
- adoption of the full range of cash-based financial ratios that Ofwat uses in regulating the companies in England and Wales; and
- the introduction of regulatory accounts.

The regulatory capital value approach to price setting

Ofwat uses the RCV approach in setting prices for the companies in England and Wales. We believe that we now have sufficient information about Scottish Water's assets and their remaining lives to move towards this method of price setting in future. It is important to understand that for the purposes of this Strategic Review of Charges, we are laying the ground for the future use of the RCV method of price setting at the next Review.

The introduction of the RCV method of setting prices will have no material impact on the prices faced by customers, the resources available to Scottish Water, or the implications for public expenditure. The changes are designed principally to allow greater transparency. Our move to the RCV method of price setting allows us to make a direct comparison of Scottish Water's financial sustainability with that of the companies south of the border.

Financial ratios

We have adopted the ratios that Ofwat used in its price determinations for 2005-10. Charges have been set in 2009-10 such that Scottish Water should have attained the same levels for the key cash-based ratios that Ofwat targeted in its Review. We have set an initial regulatory capital value consistent with this goal. Where Ofwat has stated that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target.

In their Ministerial Guidance, Ministers stressed the importance to customers of a smooth transition to the

level of prices required in 2009-10. The charge caps we have set for each year of the Strategic Review of Charges 2006-10 are consistent with this objective.

Our analysis also suggested that this approach reduced the risk of substantial real price increases in the 2010-14 regulatory control period.

Introduction of regulatory accounts

The economic regulators establish and define the guidelines for regulatory accounts. Regulatory accounts do not necessarily follow the standard accounting guidelines (FRS, UKGAAP, etc) that are used for statutory financial accounts. Indeed, regulators have made it clear that in the event of a conflict between regulatory accounting guidelines and UKGAAP, the regulatory accounting guidelines would take precedence.

Each regulator sets out specific guidance for their sector. The specialist nature of regulatory accounts allows much tighter definitions of reporting requirements than is possible in standard accounting guidelines. Such tighter definition allows comparisons of performance both over time and between companies.

In England and Wales, regulatory accounts cover all aspects of the water and sewerage companies' finances. This comprehensive information allows Ofwat to compare financial performance fully and objectively, and to set appropriate targets for efficiency, capital investment and sustainable financial indicators. We have benefited from this comprehensive information in setting targets. The introduction of regulatory accounts for Scottish Water has allowed us to make more direct comparisons.

We have also used the regulatory accounts to ensure that we can distinguish clearly between the retail and wholesale costs. The regulatory accounting guidelines define the retail and wholesale activities in significant detail. There are also rules that determine the allocation of central overhead costs between the wholesale and retail business and the general trading relationship between the two legal entities and any other subsidiary

companies of Scottish Water. We will ask the Reporter and Scottish Water's auditor to report on Scottish Water's compliance with these rules.

Critical issues

In the long run we believe that customers' interests are best served by a financially sustainable Scottish Water, operating within an effective and balanced governance and incentive framework. This will ensure that each generation of customers meets the costs of the level of service they have enjoyed.

In regulating Scottish Water, we are interested not only in the level of cost incurred but also in the level of service provided to customers. We have set levels of operating cost that reflect the improvements in the level of service we expect to see. Any shortfall in this level of service will reduce the revenue that will be made available to Scottish Water in the next regulatory control period.

Efficiency

We promote the interests of customers primarily by encouraging Scottish Water to deliver an appropriate level of service at the lowest reasonable overall cost. An efficient water and sewerage undertaker will carry out the minimum activity necessary to provide the service that is expected, at the lowest cost.

This definition applies equally to both operating costs and capital expenditure.

The charges paid by customers are a direct function of the efficiency of the water industry in Scotland.

Delivery of investment

It is critical that assets are maintained in an appropriate way and that problems are not stored up for the future.

In their February statement, Ministers had to set their priorities for the water industry in Scotland for the next regulatory control period. Customer preferences were gleaned from market research and from responses to the Scottish Executive's consultation document 'Investing in water services 2006-14'. It was important for Ministers to listen carefully to these preferences. However, it was also important to recognise the expertise of the DWQR and SEPA and their understanding of public health and environmental compliance issues. We have sought to establish the lowest reasonable overall cost of delivering the Ministers' objectives.

There have been significant increases in customers' bills in the past few years. In general, customers have accepted that there is a need to invest in our water supply and water environment. However, if promised outputs are delayed this could have an impact on customers because there is a higher risk that an output will not be delivered in full or that it will cost more to deliver. Customers are likely to question why promises of improved service levels have not been delivered when bills have gone up.

We have allowed sufficient capital expenditure to meet the efficient delivery of all of the 'essential' and 'desirable' objectives set by Ministers in their February statement.

We have published the baseline investment programme that has been funded in this draft determination in order to improve transparency. If customers have been told by Scottish Water that levels of service will improve as the result of a particular project, they should be able to check if and when that project has been delivered. This will also help ensure that Scottish Water is accountable for the delivery of agreed benefits to customers and to the environment.

Improvements in customer service

It can be difficult to measure customer service performance. Important factors such as the number of properties at risk of sewer flooding or experiencing water pressure problems require engineering judgements. It can take several years, using a consistent approach to monitoring, before we can measure performance accurately and with confidence.

We only began to collect detailed information on customer service in 2001. The uncertainty relating to this information has made it more difficult for us to set robust targets for improvements in individual measures of level of service. This draft determination does, however, make it clear the overall level of service that we expect Scottish Water to provide to its customers.

Establishing financial sustainability

We believe that the revenue increases that we implemented in the Strategic Review 2002-06 have ensured that we now have a more sustainable industry. The charge caps proposed in this draft determination reflect this more solid foundation.

If customers are to continue to benefit from a sustainable industry, we must ensure that we invest appropriately in water services. This means that a generation should pay the full costs of the service that it receives and should not store up problems for future generations. The move towards a charge setting mechanism that is tied to changes in the regulatory capital value, and to its funding costs, will make this more transparent.

Financial sustainability is critical to the success of the public sector model. In the public sector model, the Government wants best value for money for customers and to ensure that social, environmental and public health policy priorities are delivered.

If customers begin to believe that they are not getting value for money then the public sector model for the water industry in Scotland may become politically unsustainable. The greater the extent of perceived failure, the more difficult and costly may be the corrective actions required.

Rigorous monitoring

It is our role to monitor progress against targets, and to verify that service levels to customers do not suffer as a result of management action to reduce costs. It is important that we are able to measure levels of service to customers in an objective and consistent way, both now and in the future. This requires us to set out in detail the areas of service that we will measure and how they will be measured. We have endeavoured to ensure that we measure the factors that are important to customers and that customers can understand our analysis of Scottish Water's performance. We outline the regulatory contract that we will be monitoring in this draft determination.

Our work in scrutinising costs and the levels of service delivered is key to our role in ensuring that customers receive value for money on a sustainable basis. We believe that this detailed monitoring ensures that we have fulfilled our statutory duty to have regard to "the economy, efficiency and effectiveness" with which Scottish Water is using its resources.

Customers only pay once for an agreed output

Regulation has introduced much needed transparency to the process of assessing Scottish Water's performance. In the past it was not clear whether customers had received the benefits which were promised and for which they had paid.

We have responded to this risk by developing our performance monitoring significantly in the past three years. Our more detailed monitoring of the capital programme will also ensure that we can manage the transition from the Quality and Standards II to the Quality and Standards III period effectively.

Structure of the draft determination and next steps

In this draft determination we present our preliminary conclusions. There will now be a period until 23 September 2005 during which stakeholders can comment on the charge caps that we consider to be appropriate. The final determination of charges will be published at the end of November 2005 by the new Water Industry Commission.

The full detail of this draft determination is presented in the following volumes:

The Strategic Review of Charges 2006-10: The draft determination: Volume 1: The proposed charge caps - an executive summary

The Strategic Review of Charges 2006-10: The draft determination: Volume 2: Introduction and background

The Strategic Review of Charges 2006-10: The draft determination: Volume 3: Our approach to setting charge caps

The Strategic Review of Charges 2006-10: The draft determination: Volume 4: Economic regulation of the public sector water industry in Scotland

The Strategic Review of Charges 2006-10: The draft determination: Volume 5: Financing delivery of the investment objectives of the Scottish Ministers

The Strategic Review of Charges 2006-10: The draft determination: Volume 6: Setting an appropriate level of operating costs

The Strategic Review of Charges 2006-10: The draft determination: Volume 7: Setting charge caps

The Strategic Review of Charges 2006-10: The draft determination: Appendices

Chapter 1Introduction

Introduction

In the Strategic Review of Charges 2002-06 this Office advised Ministers on the appropriate price limits both for the three water authorities and for the proposed Scottish Water. The current Review, which covers 2006-10, is the first full Strategic Review of Charges to set charge limits for Scottish Water alone.

The three separate authorities remained in existence until Scottish Water was formed under the Water Industry (Scotland) Act 2002 on 1 April 2002. Under sections 21-23 of the Act the functions, property, liabilities and staff of the water and sewerage authorities were transferred to Scottish Water.

Scottish Water remains in the public sector, and is accountable to the Scottish Parliament through the Scottish Ministers. However, its structure and the way it is managed is able to draw on lessons learned from best practice in the private sector. The combination of public sector ownership and a private sector organisational structure has been designed to ensure that the business is as efficient as possible. This is clearly in the interest of all customers.

In May 2004, Ross Finnie, the Minister for Environment and Rural Affairs, wrote to both the Chairman of Scottish Water and to this Office in order to commission work on the Strategic Review of Charges 2006-10.

This was followed in February 2005 with the Ministerial Statement on:

- what Scottish Water was to achieve during the review period 2006-10;
- the principles that this Office should apply in setting charge limits for the period; and
- the borrowing that is likely to be available to Scottish Water during the review period.

Role of the Water Industry Commissioner for Scotland

Prior to 1999, the Scottish Water and Sewerage Customers' Council represented the interests of water industry customers in Scotland. The Council had responsibility for handling customer complaints, agreeing the scheme of charges for the then three Scottish water authorities, and representing customers' views.

Part II of the Water Industry Act 1999 created the post of the Water Industry Commissioner for Scotland and this Office was established on 1 November 1999. According to the Act, the Commissioner was responsible for regulating all aspects of the economic and customer service performance of the three Scottish water authorities. The Commissioner also took over the responsibilities of the Scottish Water and Sewerage Customers' Council.

The Commissioner is appointed by the Scottish Ministers through the Scottish Executive Environment and Rural Affairs Department. The Commissioner's primary role is to promote the interests of customers of Scottish Water. The Commissioner's duties include:

- advising the Scottish Ministers on the amount of revenue that Scottish Water needs to provide a sustainable service to customers and to fund its investment programme;
- considering and approving Scottish Water's annual scheme of charges;
- investigating customer complaints not resolved by Scottish Water;
- advising the Scottish Ministers on Scottish Water's standards of service and customer relations;
- approving Scottish Water's Code of Practice; and
- providing advice, when requested by the Scottish Ministers, on a range of matters relating to the impact of Scottish Water on its customers.

The Water Industry Commissioner for Scotland has set the following strategic aims:

- to be professional, objective, factual, analytical, transparent and rigorous in the approach to regulation;
- to provide all stakeholders with accurate information about Scottish Water's performance;
- to encourage Scottish Water to become more efficient and sustainable through a clearer understanding of its costs;
- to promote the interests of Scottish Water's customers to ensure that the level of customer service compares favourably with the average in England and Wales; and
- to give credit where there has been good performance and to challenge poor performance, highlighting any shortfalls in levels of service.

The Commissioner is accountable to the Scottish Ministers. As part of this accountability, the Commissioner must draft an annual corporate plan and submit an annual report and accounts. These documents set out:

- the Commissioner's work plans, performance targets and budget projections for a three-year period – this plan has to be approved by Ministers;
- the Office's activities and its progress with the forward programme as set out in the previous year's corporate plan – this report is both published and laid before Parliament.

Persuant to provisions of the Water Industry (Scotland) Act 2002, the three former water authorities merged on 1 April 2002 to form Scottish Water. The Commissioner remained responsible for regulating all aspects of Scottish Water's economic and customer service performance. The role of the Consultative Committees, established in the 1999 Act, was replaced by the Water Customer Consultation Panels.

How the Commissioner's role has developed

Since this Office was created in 1999, the scope of our activities has broadened. In our first years of operation we concentrated on the first Strategic Review of Charges and on collecting the information that was essential to that review. Gradually our ongoing monitoring of Scottish Water's performance has taken on greater significance. This monitoring role ensures that customers receive improved value for money and can have confidence that the benefits of increased investment are realised.

The Water Services etc. (Scotland) Act 2005 further develops the role of this Office. The Act establishes a Commission in place of a single Commissioner with the power to determine charge caps. It also sets up a framework for retail competition for non-household customers. The new Commission will assume the role of licensing authority. We discuss these changes in detail in Chapter 3.

The regulation of Scottish Water

Scottish Water is a monopoly business operating in the public sector. Regulation therefore plays an important role in protecting customers' interests and promoting efficiency within the business.

Effective economic and customer service regulation requires a process that is robust, transparent and verifiable by audit. We have established a detailed framework which allows us to regulate Scottish Water in a way that protects customers' interests and allows us to provide sound advice to Ministers.

The process involves gathering and analysing a wide range of financial, asset and customer information from Scottish Water. By analysing this information we can comment objectively on Scottish Water's performance and can make comparisons with other water and waste water companies. Our approach is similar to that employed by other regulators, including Ofwat, which regulates the water and waste water companies in England and Wales.

Our objective in using comparative analysis is to promote continued improvements in customer service standards, environmental and public health compliance and financial performance. Experience from other utilities and from the water industry south of the border has shown that this can bring significant benefits to customers and the environment through lower costs, improved environmental and water quality standards and better customer service.

Economic regulation

At the start of each regulatory control period, we have to complete a Strategic Review of Charges. The Scottish Ministers can commission such a Review whenever they consider it appropriate. The Review determines the level of revenue required by Scottish Water in order to be able to finance its core functions of providing water and sewerage services on a sustainable basis.

The cost of the capital investment programme that is decided by Ministers following public consultation is assessed, as is the operating expenditure required for each year of the review period. The Review takes full account of the efficiencies that Scottish Water can be expected to make. The Strategic Review of Charges therefore represents the baseline against which Scottish Water's performance can be measured.

During the regulatory control period we monitor Scottish Water's performance. Each year, we collect a significant amount of information from Scottish Water, most of which is information that is required for the day-to-day management of the business. We analyse the financial and economic information that we receive and use this to monitor and report on performance in two reports (the Investment and Asset Management Report and the Costs and Performance Report).

Customer service regulation

Customer service regulation of Scottish Water involves ongoing monitoring of Scottish Water's performance on customer service measures. Once again, this is achieved through our review, analysis and reporting of customer service information that Scottish Water submits to us. We can also make use of information from our investigation of complaints (see below) and from our programme of consultation.

We work with the WCCPs to ensure that Scottish Water offers an appropriate level of service to customers. The WCCPs have a remit to represent customers and can make representations to the Commissioner.

An important aspect of customer service regulation is the approval of Scottish Water's Code of Practice. Scottish Water has an obligation to produce a Code of Practice under section 26 of the Water Industry (Scotland) Act 2002. The Code of Practice provides information on the standards of service that customers can expect and on how Scottish Water will deal with customers.

Once Scottish Water has prepared a draft of its Code of Practice, it submits the draft to this Office. The Commissioner consults with the WCCPs and compares the service levels proposed by Scottish Water with those offered by other water and utility companies. Comments and suggestions are provided to Scottish Water and new drafts are reviewed until a final version is agreed.

Until the provisions of the Water Services etc. (Scotland) Act 2005 are implemented, the Water Industry Commissioner for Scotland has a statutory duty to investigate complaints. We investigate written or telephone complaints that we receive direct from customers, as well as complaints referred to us by the Convenor of the WCCPs.

In some cases the complaint may be dealt with by providing an explanation to the customer about how a decision has been reached or by confirming that Scottish Water has carried out an appropriate process or procedure. In other cases we may have to intervene in order to help resolve a dispute between Scottish Water and the customer.

The Strategic Review of Charges 2002-06

In August 2001, our Office was commissioned to carry out the Strategic Review of Charges 2002-06 by the Minister for Environment and Rural Development, Ross Finnie, MSP. At that time, the Parliament was considering proposals from the Scottish Executive to merge the three water authorities and create Scottish Water. It was therefore necessary for us to advise on revenue caps both for the proposed Scottish Water and for the existing three authorities. Our methodology needed to allow stakeholders to make objective comparisons of the implications for customers of the merger.

In 2001 we said that if the industry met the challenges it faced, and there was not a significant increase in the investment programme, then by 2006 customers could enjoy an environmentally and financially sustainable service without a further real increase in their bills. Scottish Water has made a good start in meeting the challenges that were set in the 2002-06 Strategic Review. It is this significant improvement in performance that underpins the positive price outlook contained in this draft determination of charges.

The creation of Scottish Water has brought benefits to customers throughout Scotland. Customers in all parts of Scotland are now paying less than they would have paid if Scottish Water had not been established. The trend of worsening efficiency in the Scottish water industry over past years has been halted, and the rate at which efficiencies are being made is beginning to improve significantly. Notwithstanding its progress to date, Scottish Water has more to do if it is to meet the service and cost levels of the industry in England and Wales.

The Strategic Review of Charges 2006-10

Regulation seeks to ensure that customers enjoy a value for money service. Customers should be able to count on a supply of high-quality, wholesome drinking water, continuing improvement in our water

environment, and a service that is provided at a reasonable cost. It is the job of the regulators to ensure that customers enjoy a 'silent' service, ie one that they can take for granted.

Customers will rightly expect us to have built on progress since the last Strategic Review of Charges. We have set prices that are sufficient, but no more than sufficient, to fund the essential and desirable investment specified in the Ministerial Guidance.

The Better Regulation Task Force principles

We are committed to the Better Regulation Task Force⁴ principles of accountability, transparency, proportionality, consistency and targeting. As such, we have published all of the key information submissions that this Office has received from Scottish Water, as well as the tools that we have used to complete our analysis, including our financial and tariff basket models.

We have also published six consultation and information documents to support our Strategic Review of Charges 2006-10. In these documents we explained in detail the proposed methodology for the Strategic Review and invited stakeholders to comment on our methodology. The documents we published are shown in Table 1.1.

Table 1.1: Consultation documents published

Volume	Title	Date published	Date for responses
1	Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10	22/07/04	29/09/04
2	Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10	13/08/04	29/09/04
3	Our work in regulating the Scottish water industry: How we intend to set prices in the Strategic Review of Charges 2006-10	22/09/04	29/10/04
4	Our work in regulating the Scottish water industry: How we intend to assess operating efficiency in the Strategic Review of Charges 2006-10	07/10/04	05/11/04
5	Our work in regulating the Scottish water industry: The scope for capital cost efficiency	17/12/04	19/1/05
6	Our work in regulating the Scottish water industry: a summary	17/12/04	n/a

The Better Regulation Task Force was established in September 1997. It is an independent body that advises Government on action to ensure that regulation and its enforcement accord with the five Principles of Good Regulation.

The six volumes are available on our website (www.watercommissioner.co.uk). We notified the following that the documents had been published:

- 193 individuals (including academics and our professional advisors); and
- 137 organisations (including local authorities and water companies).

We summarised the issues raised by consultation responses in May 2005: 'Our work in regulating the Scottish water industry: the Water Industry Commissioner's response to issues raised by respondents to the consultation on methodology'. This also highlighted where our methodology had changed in light of the responses and where further analysis was required.

In order to support the consultation process we also held a number of stakeholder information days and workshops. These were outlined in Volume 1 of our methodology consultation and a summary of the issues raised can be found on our website.

The financial model

We used a financial model to establish the appropriate level of revenue for Scottish Water to deliver outputs specified in the Ministerial Guidance⁵. This model allowed us to ensure that an appropriate balance is struck between current and future customers. We also used the financial model to protect customers from unnecessary fluctuations in their charges.

In common with other regulators, we used a financial model that allows different cost, investment and timing scenarios to be assessed. This ensures that we have set charges at the lowest sustainable level. The financial model was conceived and developed using in-house resources and was subject to extensive external audit. This audit reviewed both the workings of the model and internal processes, such as version control, during the preparation of the draft determination.

The financial model was constructed using Microsoft Excel©⁶. It is available on our website.

Aims of the Strategic Review of Charges 2006-10

The Strategic Review of Charges 2006-10 has followed the terms of the commissioning letter and subsequent Ministerial Guidance very closely. The February Ministerial Guidance set objectives for the water industry. It detailed the investment that had to be delivered and the principles of charging to be employed in setting charge caps. This draft determination builds on the strong foundation for the industry that was created by the previous Review. In preparing this Strategic Review of Charges, we have the benefit of four years of detailed asset, cost and customer information. We have also sought to learn from the experience of the last Strategic Review and from the comments that we have received from individual customers and stakeholder organisations.

The principal aim of this Strategic Review of Charges 2006-10 is to set charges at the lowest overall level that is consistent with the delivery of the Ministers' objectives for the industry.

Structure of the draft determination

The draft determination is set out in seven volumes. These are:

The Strategic Review of Charges 2006-10: The draft determination: Volume 1: The proposed charge caps - an executive summary

The Strategic Review of Charges 2006-10: The draft determination: Volume 2: Introduction and background

The Strategic Review of Charges 2006-10: The draft determination: Volume 3: Our approach to setting charge caps

The Strategic Review of Charges 2006-10: The draft determination: Volume 4: Economic regulation of the public sector water industry in Scotland

Ministerial Guidance, February 2005 available at www.watercommissioner.co.uk

⁶ Stakeholders who wish to download the model will require a licensed copy of Microsoft Excel®.

The Strategic Review of Charges 2006-10: The draft determination: Volume 5: Financing delivery of the investment objectives of the Scottish Ministers

The Strategic Review of Charges 2006-10: The draft determination: Volume 6: Setting an appropriate level of operating costs

The Strategic Review of Charges 2006-10: The draft determination: Volume 7: Setting charge caps

The Strategic Review of Charges 2006-10: The draft determination: Appendices

Structure of this volume

Chapter 2 of this volume examines the role of regulation in delivering value for money for customers. Chapter 3 covers changes in the regulatory framework. Chapter 4 discusses the implementation of the Water Services etc. (Scotland) Act 2005. Chapter 5 looks at other inputs to the Strategic Review of Charges 2006-10. In Chapter 6 we examine the implications of the changing regulatory framework and Chapter 7 highlights some of the critical issues that the Strategic Review of Charges has addressed.

Chapter 2 The role of regulation

Introduction

Monopolies can exist in both the public and private sectors. They can also exist at an international, national or local level. In theory, a monopoly exists when there is a single supplier to a defined market. In practice there are very few examples of such pure monopolies. An effective monopoly is present when most, if not all, customers do not have any real choice and when the dominant market supplier determines the terms and price of supply.

The limited options that exist for customers in Scotland to make arrangements for their water or waste water that are separate from the public network do not substantially alter the extent of Scottish Water's monopoly. Similarly, in England and Wales, although an industrial or commercial customer in one area can request a service from a supplier in an adjoining area, in most cases this is not economically viable.

The purpose of regulation is to seek to ensure that such monopoly businesses act in the customer interest. Regulators can act to encourage the supplier to provide a better level of service to customers and/or to reduce costs while maintaining the level of service. In practice, regulators seek to balance improvements in the level of service to customers with the costs of such improvements.

The role of customer service regulation

Scottish Water's customers are concerned not only about the price they pay for water and sewerage services, but also about the quality of service they receive. It is the combination of price and this quality of service that determines whether customers receive value for money from Scottish Water.

There are many different aspects of Scottish Water's quality of service. Some of these relate to operation of the network; for example, how frequently supply is interrupted and the quality of the water delivered. Others relate to the interaction between Scottish Water and its customers; for example, the time taken to

respond to billing enquiries or the time taken to respond to a complaint. Regulation must take account of all aspects of quality of service.

In a competitive market, firms compete with each other in terms of price and quality. In some markets, firms occupy niches such that customers have a choice of products or services that are low cost and low quality, of average cost and of average quality, and of high cost and of high quality. Customers will choose the cost-quality combinations that match their preferences. A firm operating in a competitive market has to ensure that the quality of the good or service it provides is consistent with the price of the good or service.

Where prices are regulated the company may have an incentive to meet cost reduction targets by reducing quality. For example, in order to meet operating cost targets a water company could reduce maintenance activity and allow the network to deteriorate. Alternatively, it could reduce the capacity for handling billing contacts or other enquiries and allow performance in these areas to worsen. Although the cost reduction target may be met this does not constitute an improvement in efficiency. Improved efficiency implies either a higher quality output for the same price or the same quality output for a lower price.

In a regulated market, the regulatory framework must therefore ensure that the level of service is appropriate.

Regulation can provide an incentive for the regulated firm to improve the quality of the service it provides. It can do this directly by setting targets for different elements of service quality and measuring performance against those targets. However, the regulator would require a considerable amount of information in order to set targets for each element of service quality. The regulator would also require information about the level of service quality that is possible for any particular level of cost, and about customer priorities between the different aspects of customer service. Such an approach would require a significant increase in the information collected from the regulated company.

Rather than setting targets for each aspect of service quality, a regulator may compare actual performance

against other similar companies ('comparative competition'), and highlight areas where performance could be improved. The regulator may then monitor performance and report on how well the company is performing against the areas identified for improvement. Public comment on performance can often encourage a regulated company to seek to improve in either absolute or relative terms.

The role of economic regulation

Network utility industries tend to be monopolies because the cost to replicate the network would be excessive. Economists describe them as involving a significant 'natural monopoly' element. A natural monopoly refers to the situation where there is only one firm supplying a product in the market, but this is not the result of the firm's behaviour. Instead, it arises because it is the sensible way to organise the industry and it is in the best interests of customers to do so.

The reason that it is sensible to organise the industry in this way is because it is cheaper for one firm to supply the whole of the market than for two or more firms to share the market. For example, a single firm may have costs of £2 million to supply the whole market, whereas if two firms shared the market each may have costs of £1.5 million. It follows that if there were a single firm in the market customers would have to pay £2 million in charges to cover costs, whereas if there were two firms in the market customers would have to pay £3 million in charges. In such a situation the single firm is benefiting from economies of scale.

However, the behaviour even of natural monopolies may work against the customer interest if unchecked. There are two ways in which this might happen.

First, if the service is an essential service and the customer has no choice about where to purchase it, the monopoly has an incentive to charge an excessive price and to make excessive profits. This type of behaviour is known as monopoly pricing. Since the product is essential, the firm can raise its price without demand for the product falling too far. The firm's profits will therefore increase as it raises its price. From the customer's point

of view there is little alternative to buying the product, regardless of the price. Water and power are typical products of this type.

Second, in the absence of competition the monopoly faces no incentive to innovate and improve its efficiency over time. From the point of view of the firm a failure to innovate and improve efficiency will have little or no implications for the size of the market that it serves or the level of profit that it earns. Compared with a competitive market, the industry will tend to stagnate.

In the water industry south of the border Ofwat has a duty to ensure that an efficient business can fund its operations. Customers desire a service that is provided on a sustainable basis. The owners of the privatised business are required to ensure that management meets or exceeds the targets set by the regulator. Such out-performance is the only way to ensure that the owners of the business will receive a higher return on their investment.

In the public sector, regulation of the water industry focuses on ensuring that the Government's environmental and public health objectives are delivered at the lowest reasonable overall cost.

In both the public and private sector, economic regulators⁷ seek to establish a tight budgetary constraint on the regulated body. In other words, clear statements are made about the outcomes for customers that the body must deliver **and** about the amount of money that can be spent. This can be achieved by fixing the maximum return available (unless targets are beaten) or by limiting the total cash funds that may be consumed.

This tight budgetary constraint should focus management attention on delivering ongoing improvements in value for money to customers. This explains why regulators publish regular assessments of the financial performance of the companies or organisations they regulate. Of course, regulators will also monitor the outcomes for customers very carefully. It is not in customers' interests if budgetary pressures result in corners being cut either in customer service or in the way the asset base is maintained. In this regard it is important to be clear about what regulators mean by efficiency: we recognise efficiency when an

Regulation of a public sector corporation is not unique. Postcomm fulfils a similar role to this Office in its regulation of Royal Mail. The Civil Aviation Authority also has economic regulation responsibilities for the locally owned Manchester Airport.

improved or at least equivalent level of service has been delivered to customers at a lower cost.

In a competitive market, companies face similar tight budgetary constraints in that they have to match their costs to the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

Incentive-based regulation ensures that there is continuous pressure on Scottish Water to meet these targets.

Our incentive-based approach in this draft determination has been developed to ensure that we encourage efficiency in the delivery of investment. The water and sewerage industry is an asset-intensive industry that relies on expensive assets with very long lives. If the industry is to provide a reliable service, at the level of quality that is expected by customers, it is important that regulation should provide incentives to invest and should avoid producing disincentives to invest.

How economic regulation in the public sector is different

All UK economic regulators adopt this incentive-based approach to determining prices. The analysis is complex and thorough, but essentially the regulator analyses the scope for improvement in performance.

Past performance is analysed across the sector⁸ and an initial benchmark set. The regulator then decides how much further improvement in performance is reasonably achievable by an efficient company during the forthcoming regulatory period. This then determines the target that is to be set for all companies in the sector. A determined management may out-perform the targets and in doing so will benefit the shareholders (private companies) or customers (Glas Cymru), but such out-performance will also raise the level of performance expected at future reviews. It is this ratchet approach that has resulted in the significant efficiency gains south of the border.

Regulators normally rely on shareholders to exert pressure on management to out-perform efficiency targets. More recently, however, the creation of not-for-dividend companies (such as Glas Cymru⁹ and Network Rail) and the introduction of regulation to public sector companies (such as Scottish Water and Royal Mail) has led regulators to refine their approach.

Regulators have, in general, concluded that incentive-based regulation can be used to regulate the not-for-dividend companies. Obviously they can no longer rely on shareholder pressure to improve value for money to customers. This has required regulators to focus on corporate governance and incentive frameworks. Ofwat set several conditions when it approved the establishment of Glas Cymru. These conditions included the creation of transparent incentives that align the interests of management and those of customers. The Department for Transport and HM Treasury established a similar framework for Network Rail.

PostComm uses incentive-based regulation but does not currently use the regulatory capital value method of price setting. The Royal Mail is a service rather than an asset based industry. The regulatory capital value approach to price setting is likely to be more appropriate for asset based industries.

In regulating the water industry in Scotland, we want to ensure that we take full advantage of the relatively cheap government borrowing that is available; at the same time we are mindful not to reduce the impact of the tight budgetary constraint on current management or to increase bills for future customers disproportionately.

In the private sector, there exists a contractual relationship between the Government and the private utilities. Each utility has a licence to operate that requires it to meet standards of operation that are considered appropriate in terms of social, environmental, and public health policy objectives. The economic regulator takes account of all such issues that arise from legislation or other government guidance when determining the outputs that are to be delivered, and then sets the price limits accordingly. Thereafter, he depends on shareholder pressure to ensure that these are delivered as efficiently as management can achieve, and simply has to monitor performance to ensure that the defined standards are properly achieved.

⁸ For Scottish Water we look at the water and sewerage industry both north and south of the border.

⁹ Glas Cymru is a not-for-profit company, limited by guarantee, which acquired Welsh Water in May 2001.

In the public sector, the regulator has to assess the lowest reasonable overall cost of delivering the objectives set by the Scottish Ministers. He cannot rely on the presence of market forces to deliver efficiency.

Regulation of Scottish Water in the public sector

There is a consensus that water should remain in the public sector in Scotland. In this context, our role is to set a framework within which Scottish Water can improve its efficiency and consequently the value for money it provides to customers. This has required us to consider firstly the issues of incentives and governance, and secondly the appropriate level of borrowing.

There is much to be gained by addressing these issues. If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower prices than those that could be offered by a private sector operator. This is because the public sector is able to access capital at lower cost.

There can be no doubt that customers benefit significantly from Scottish Water's ability to access public government loans. These government loans attract interest rates that are lower than the cost of commercial debt of similar term length for the water and sewerage companies in England and Wales. This relatively expensive private debt is, moreover, considerably cheaper than equity. The cost of capital for a company south of the border is therefore much higher.

Although direct comparisons can be difficult because of the existence of equity and the duration, base rate and tax issues associated with private debt, a comparison with Ofwat's allowed cost of capital helps to illustrate this general point.

Ofwat's allowed cost of capital for the period 2005-10 is 5.10% real post-tax for the water and sewerage companies. Government loans to Scottish Water since its creation attracted nominal pre-tax interest rates of between 3.3% and 4.9%. The weighted average interest

rate for new loans taken out by Scottish Water in 2002-04 was 4.16% nominal pre-tax. We have allowed Scottish Water a maximum 4.6% nominal pre-tax cost of capital¹⁰. This would be equivalent to approximately 1.4% real post-tax on the debt/customer retained earnings split that exists at the start of the 2006-10 regulatory control period. We have provided Scottish Water with an additional allowance to cover its embedded debt.

We estimate that Scottish Water's customers probably benefit by approximately £100-140 million a year, because of the saving on the annual cost of capital of around 3.7%. We have calculated this on the basis of the initial regulatory capital value. This saving is likely to increase over time if Scottish Water continues to enjoy access to public borrowing.

It is important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently.

However, as regulator we must take into account that customers of Scottish Water are more immediately exposed to the financial risks of the business than customers in England and Wales. This is because there are no private equity shareholders. In the event of an external shock or under-performance by the business a private utility can:

- withhold dividend payments to shareholders;
- seek a rights issue; and
- obtain debt in the private markets.

Scottish Water, by contrast, must either:

- seek unplanned public expenditure in the form of a loan; or
- increase charges to customers immediately.

The presence of private equity acts as a significant shock absorber, so protecting customers in England and Wales. An example to illustrate this point is the costs of around £250 million that resulted from the drought in

The customer retained earnings component (the regulatory capital value less outstanding debt) is remunerated at 3.22%. This is equal to the post-tax cost of debt. We discuss this in more detail in Chapter 17 of Volume 5.

1995, which had to be absorbed by the equity holders of Yorkshire Water. Moreover, Ofwat cut the prices that Yorkshire Water could charge to customers, as a result of its poorer service, and as a result further limited the return available to shareholders.

The private sector provides a further level of risk management that benefits customers. Strong incentives help to reduce customers' exposure to financial risk. The commercial interests of the company are served by ensuring that management takes action to minimise the impact of external shocks on the business. Even more importantly, there are commercial incentives to out-perform efficiency targets, which benefit customers in the medium term¹¹. In other words, tight budgetary constraints apply a degree of financial discipline to the business, so that there are 'sticks' as well as 'carrots'.

However, we should emphasise that it is not necessary to adopt an equity-funded model in order to manage financial risk. Glas Cymru has established a structure that protects customers from financial risk, without a traditional shareholder acting as a 'shock absorber', since total debt is less than its regulatory asset value.

In 2001 Glas Cymru purchased the assets of Welsh Water for 95% of its regulatory capital value. The lower purchase price, a clear ring-fence on activities, and transparent incentives that are published in advance have all contributed to a lower cost of capital. Glas Cymru is believed to have one of the lowest costs of capital in the water industry south of the border. This results from its focus on the core business and from the fact that it does not use equity capital.

Glas Cymru's average cost of debt is approximately 6.8%. This is equivalent to 4.76% post-tax. The budgetary constraints are still tight and the debt provided by private banks is at risk if there is an unforeseen shock. However, customers are protected because the banks are committed in advance to making additional funds available if there is such a shock (although there are likely to be governance implications for the organisation). Customers would not suffer (assuming that proper management could have avoided or limited the shock) since Ofwat would be under no

obligation to increase the cash value of the return on capital allowed to Welsh Water as a consequence of any unforeseen shock.

In May 2005 we wrote to the Deputy Minister for Environment¹² to outline our proposals to manage these risks. We recognise the risks borne by the customers of Scottish Water. We propose to reflect this risk by, in the event that Scottish Water out-performs its regulatory contract, commenting on the scope for Scottish Water to accept a lower charge cap in subsequent years of the regulatory control period. At the same time, in line with the Ministerial Guidance we have ensured that the financial strength of Scottish Water (as measured by the debt to RCV ratio) continues to improve gradually. Our proposals are discussed in more detail in Chapters 6 and 7 of Volume 4.

The 2006-10 determination of charges should be seen as an agreement between customers and Scottish Water about the level of service that will be provided during the period.

Alignment of incentives is an important principle. Had Ofwat not believed that Glas Cymru would seek to out-perform efficiency targets, in the same way as a regulated company that is subject to shareholder pressure, it would have needed to modify the approach to determining Glas Cymru's price settlement. We present a detailed case study of Glas Cymru in Volume 4 of this draft determination. Ofwat paid particular attention to the incentive framework that was introduced for Glas Cymru's senior managers.

At present there is no equivalent incentive system in place for Scottish Water's management. Managerial incentives are not linked in any transparent way to the organisation's performance against economic, public health or environmental targets.

For incentive-based regulation to work, it is essential that managerial incentives are available for out-performance of targets, not for progress towards them. We addressed this issue in our second open letter to Scottish Ministers.

¹¹ Out-performance in a regulatory period can be retained by the company for five years. This benefit is then transferred to customers.

This letter is available on our website.

It is at least equally important that, in future, customers are not asked to pay twice for the agreed level of service. If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view, their response should not adversely impact on customers.

How an economic regulator ensures that customers receive value for money

Setting an appropriate tight budgetary constraint

We have already discussed the importance of the tight budgetary constraint in both the public and private sectors. In other words, clear statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent.

Setting transparent targets for operating and capital costs that are challenging but achievable

Our ability to maximise value for money to customers depends in large part on setting challenging but achievable targets on financial performance. In 2001, we set challenging efficiency targets for Scottish Water. By 2006, we expect that Scottish Water will have reduced its inherited operating costs by some £145 million annually in real terms. Customers' bills will consequently be around 15% lower than they would otherwise have been.

Notwithstanding the cost reductions already achieved by Scottish Water, our analysis has demonstrated that there is still considerable scope for further improvement after 2006. We have therefore set Scottish Water the challenge of further reducing its level of operating and capital expenditure costs. We believe that this regulatory contract may be challenging but that it is achievable. It will ensure that prices paid by customers are as high as they need to be to ensure that the Ministers' objectives

for the industry can be delivered – but no higher than they need to be. We have endeavoured to ensure that the regulatory contract is as clear and transparent as possible. This should encourage stakeholder confidence in the reported performance of the industry.

Limits to economic and customer service regulation

Limits to economic regulation

As discussed, the purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Regulation seeks to capture, for the customer, the benefits of economies of scale enjoyed by a natural monopoly and to avoid the excessively high prices and the tendency to stagnate that characterise unconstrained monopolies. However, there are limits to the ability of regulation to perform this role.

The effectiveness of regulation will depend on the quantity and accuracy of information available to the regulator and the consistency and clarity of the policy framework within which he or she operates.

In common with Ofwat, we collect information from Scottish Water in standard formats. Each request for information is issued with a clear explanation and detailed definitions of what is required. Recently, we agreed with the Scottish Executive and Scottish Water that we should appoint a Reporter to audit the consistency and completeness of information provided to us. This brings the Scottish industry broadly into line with the situation south of the border.

Regulators use information from both the regulated company and other sources. There is always an asymmetry between the information that the regulator requests and the far greater detail of information held by the regulated company. We make extensive use of information collected by Ofwat to ensure that we can form an accurate picture of performance.

Regulation of network industries takes place within a complex policy framework. It is important that the

regulator benefits from clear guidance in order to be able to strike an appropriate balance between potentially competing priorities (namely, low bills or additional environmental improvements).

For the water industry south of the border, Ofwat has used an incentive-based framework to improve the value for money received by customers. All of the regulated water companies have an incentive to invest because they are guaranteed a return on efficient investment and are allowed to keep the benefits of out-performance of regulatory targets for five years. Ofwat has also made extensive use of comparative competition to ensure that the performance of each company (in terms both of costs and levels of service) relative to its peers is clear.

Ofwat publishes its performance monitoring assessments. These include 'league tables' for customer service and relative efficiency. Unless a company is content to see itself at the bottom of the league, it has an incentive to innovate and improve its performance. This regulatory regime therefore does mimic a genuinely competitive market.

Limits to customer service regulation

Effective customer service regulation is dependent on good quality information on customer service performance. Reliable information about the quality of customer service is more difficult to collect than information about costs, customers or assets. Much of the information relies on works management reporting, statistical analyses and complaints. Moreover, performance in individual years may be adversely impacted by abnormal events.

In Scotland we do not yet have as accurate a picture as we would like of the quality of service performance and how it compares with performance south of the border.

In England and Wales, information about the level of service to customers has been collected for a number of years. Regulation through comparative competition and the audit of information by Reporters has ensured that this information now accurately reflects the service provided to customers.

By contrast, in Scotland we have only relatively recently begun to collect information about the level of service to customers in a consistent way. Over the next few years we would expect this information to become much more reliable so that more detailed comparisons with levels of service south of the border will be possible.

Types of regulatory frameworks

There are three main regulatory models:

- Cost-of-service (rate of return) regulation: in this
 model the regulator sets the return that can be
 earned on investment by companies. This enables a
 company to recoup, at a set rate, the costs and
 investments that it has put in to deliver the services
 provided these are in line with the agreed budget.
 Cost-of-service regulation includes no incentive to
 minimise costs or to avoid the 'gold-plating' of assets.
- Price cap regulation: price cap regulation (RPI-X) sets the maximum prices that companies can charge for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to improve returns to the shareholder or, in the case of Glas Cymru, deliver the rebates to customers' bills that were promised by management.
- Franchise regulation: under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

We believe that price cap regulation is the most applicable to the Scottish water industry's current position. The UK regulators all use this approach. Using this approach in Scotland will allow more direct comparison with the industry in England and Wales. This is important as it is through benchmarking Scottish Water's performance with the performance of other water companies that we can determine the extent of efficiencies that are possible.

RPI-X incentive framework and benefit sharing

In the context of regulated utilities, incentive regulation has been defined as "the use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals" In the case of the water industry, the "desired goals" would include:

- · keeping prices to customers as low as possible;
- meeting environmental and water quality objectives;
- delivering the required investment programme;
- maintaining the long-term sustainability of the industry; and
- meeting customer service targets.

Some commentators have suggested that RPI-X promotes short-term planning by utilities instead of encouraging the long-term investment planning that could sustain efficiency improvements and would be more beneficial to customers. We agree that there is a risk that regulated companies are likely to maximise their short-term performance. It would be desirable to ensure that regulated companies planned for the long term. We consider that transparent and consistent regulation are likely to be at least as important in ensuring companies have the confidence to plan for the long term as other potential regulatory actions.

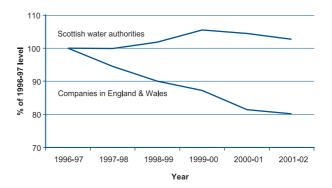
However, in developing our approach to the scope for capital expenditure efficiency, we have been able to develop the standard incentive-based regulation approach in order to balance the various stakeholder interests that impact on the public sector water industry. In particular, our approach takes account of the fact that we have an owner who would tend more towards utility maximisation than profit maximisation 14.

How economic regulation of the Scottish water industry has already benefited customers

Track record of the three former water authorities

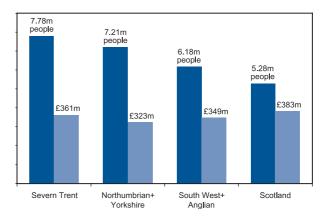
In their last years of operation the three former water authorities were becoming less efficient at a time when the industry in England and Wales continued to improve its performance. This is illustrated in Figure 2.1.

Figure 2.1: Trends in base operating costs of predecessor authorities 1996-97 to 2001-02



In the Strategic Review of Charges 2002-06 we used Figure 2.2 to illustrate the gap in the operating cost performance of the industry in Scotland and south of the border.¹⁵

Figure 2.2: Comparison of operating expenditure and population served 1999-2000



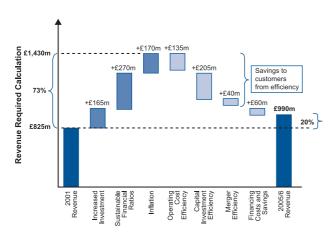
Lewis, Tracy and Garmon, Chris 'Fundamentals of incentive regulation'. PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

¹⁴ A utility maximising owner seeks to maximise priorities other than profit eg public benefit or environmental benefit.

¹⁵ This comparison did not take account of any impact of the smaller water-only companies that operate in many of the ten sewerage regions.

If we had not identified the scope for efficiency, prices would have increased by an even greater percentage during the last regulatory control period, as Figure 2.3 shows.

Figure 2.3: The scope for efficiency and other savings



The scope for efficiency that we identified reduced the required increase from some 73% to a still significant, but more acceptable, 20%.

Performance of Scottish Water

The actual level of operating costs inherited by Scottish Water was some £20 million higher than expected when we completed the Strategic Review of Charges 2002-06. Scottish Water will have cut annual operating costs by some £145 million in real terms during the regulatory control period 2002-06. Scottish Water has done well over the last four years and these savings will continue to benefit customers in the period 2006-10. Total real operating cost savings will be greater than projected in the Strategic Review of Charges 2002-06.

We have also successfully established a baseline for the level of customer service provided by Scottish Water to its customers. In future years we will be able to report, in an increasingly reliable way, on the underlying improvement in Scottish Water's customer service performance.

Conclusion

It is clear that the introduction of economic and customer service regulation has begun to deliver benefits to customers. Much, however, remains to be done. We believe that the changes to the regulatory framework that have been introduced in the last three years will strengthen regulation and ensure that customers benefit from improved value for money more quickly than would otherwise have been possible.

Changes in the regulatory framework are described in more detail in Chapter 3.

Chapter 3

Changes in the regulatory framework

Introduction

The regulatory framework for the water industry in Scotland is broadly similar to that in England and Wales. There are separate organisations that are responsible for customer service and economic regulation, environmental protection, and safeguarding public health.

Regulation of the water industry in Scotland has developed significantly in recent years. This has brought major improvements in transparency and accountability for Scotland's water industry, to the benefit of all stakeholders. We described the role of the Water Industry Commissioner for Scotland in Chapter 1. The other principal agencies that are responsible for regulating Scotlish Water and representing stakeholders' views are described below.

The Water Customer Consultation Panels

The Water Industry (Scotland) Act 2002 created five Water Customer Consultation Panels across Scotland to represent the views and interests of customers of Scottish Water in the areas covered by the Panels. The Panels are independent of Scottish Water and of other agencies, including the Water Industry Commissioner. These five Panels replaced the three Consultative Committees, chaired by the Water Industry Commissioner, that were established by the 1999 Act.

Each Panel is required to maintain close contact with customers and representative organisations through meetings and consultations, and by publishing reports and other documents.

The Panels establish contact with customers (household and non-household), local authorities and community groups across Scotland. They also liaise with large and small businesses, commission reports and undertake market research in order to establish customers' views and concerns.

The Drinking Water Quality Regulator

The role of the Drinking Water Quality Regulator for Scotland was established by the Water Industry

(Scotland) Act 2002. The primary purpose of the drinking water quality regulations is to protect public health. The DWQR provides an independent check that Scottish Water is complying with the drinking water quality regulations. These regulations include both European Union and other statutory standards. The Act provides the DWQR with extensive powers to:

- acquire information;
- conduct investigations; and
- take enforcement action should this prove necessary.

The Scottish Environment Protection Agency

The Scottish Environment Protection Agency was established by the Environment Act 1995 and became operational on 1 April 1996. SEPA is responsible for a range of activities, including the following:

- Regulating discharges to rivers, lochs, estuaries and coastal waters from industry, sewage treatment works, fish farms, septic tanks, etc.
- Controlling pollution from waste management activities, including licensing storage and disposal of waste and regulating landfill sites.
- Protecting and improving the water environment, including River Basin Management Planning under the Water Environment and Water Services Act.

Although each of these regulatory and representative bodies is independent, with different statutory duties, they work in a co-ordinated way to promote the interests of all stakeholders in the water industry in Scotland. The best example of this co-ordination is the Quality and Standards process. This process, which is led by the Scotlish Executive, defines the investment needs of the water industry in Scotland.

The Strategic Review of Charges 2002-06

Regulation of the water industry in Scotland was new in 2001 and our approach to the Strategic Review of Charges 2002-06¹⁶ was tailored to take account of the information that was available at that time. We were required to consider the revenue requirements of the three authorities and the proposed Scottish Water. This included all of the activities of the authorities, even those that were not essential to the provision of water and sewerage services.

One important early conclusion of the Strategic Review of Charges 2002-06 was that there was considerable scope for efficiency. It also quickly became clear that there was limited scope for significant further borrowing if the charge levels faced by future customers were not to be compromised.

The opportunity for efficiency

We used benchmarking to establish the potential scope for efficiency in both operating and capital costs. Our benchmarking used the information that we collected from the industry in regulatory returns and also information about the companies south of the border that had been collected by Ofwat.

The first step was to assess a level of base operating costs. This is the level of costs that would be required simply to maintain the current level of service. The base level of operating costs is established after adjustments for one-off items or events. Examples include the costs of dealing with the 'millennium bug' or unusual weather conditions. Costs can increase if justified by an improvement in the level of service or by the number of customers served.

Efficiency targets are applied to both the base level of operating costs and to any additional operating costs allowed for improvements in the level of service to customers. We did not take account of the poorer level of service provided to customers in our assessment of the relative efficiency of the water industry in Scotland. We

allowed only new operating costs that had not already been factored into the Ofwat econometric models¹⁷.

We set the actual operating cost efficiency targets relative to the expected level of efficiency of the comparator companies in 2005. There was a clear gap in efficiency between the industry in Scotland and the comparator companies. We therefore sought to establish an appropriate target that would be challenging but achievable. To establish such a target we looked at the performance of the companies relative to the leading company over a five-year period. We observed that, on average, a company closes 85% of the gap to a leading company during a five-year regulatory period. On this basis, we decided that an appropriate and achievable target was that the industry in Scotland should close 80% of the gap to the comparator companies by 2006. The efficiency target was set as a percentage reduction in the base level of costs. We assumed (as does Ofwat) that a company should deliver an appropriate level of service to customers for the benchmark level of operating costs.

Efficiency in capital expenditure is more difficult to assess and to monitor than efficiency in operating costs. We divided the planning and delivery of capital expenditure into four distinct areas. The potential for efficiency would therefore be the sum of efficiencies identified in:

- strategic asset management;
- programme planning or investment appraisal;
- · procurement; and
- innovation.

This approach simplified the process of assessing relative performance. Our approach, and the sources of information that we used, are summarised in Table 3.1.

¹⁶ For a detailed discussion of the methodology used in 2001, see pages 47 to 104 of the Strategic Review of Charges 2002-06.

¹⁷ See Chapter 18 of the Strategic Review of Charges 2002-06.

Table 3.1: Methods for assessing capital efficiency

Area identified for efficiency	Tools	
Strategic asset management	Information project, industry consultation, benchmarking	
Programme planning or investment appraisal	Information project, industry consultation, benchmarking	
Procurement	Cost base analysis	
Innovation	Babtie Group report	

We were aware that there was a considerable efficiency gap in the delivery of capital investment. On balance, we considered that it would be better to set the target on the same basis that we had used for operating expenditure. The capital target was therefore set at 80% of the gap in efficiency between the industry in Scotland and the Ofwat benchmark (not the leading companies). We also decided to phase the capital efficiency targets.

We applied the capital expenditure efficiency target to 92% of the Quality & Standards II capital programme, as around 8% was accounted for by capitalised operating costs. The operating cost efficiency targets were applied to these capitalised operating costs.

Need for financial sustainability

It is not a straightforward process to compare financing of the water industry in England and Wales with that in Scotland. It is important to bear in mind that the industry south of the border is privately funded. This has the drawback of requiring customers to pay a higher cost of capital, although it does provide a buffer, which insulates customers from any operational or legislative shocks. The important factor for a private company (and from Ofwat's perspective) is therefore whether its financial ratios make it possible to attract capital from the markets. At the Strategic Review of Charges 2002-06 we considered that debt payback ratios were the best way to make comparisons of financing both sides of the border.

It could be argued that a more prudent cover should be assumed in a public sector model since there is no shareholder to help cushion any operational or legislative shocks. Tables 3.2 and 3.3 show that Scottish

Water was allowed to borrow to the maximum extent allowed according to these two ratios.

Table 3.2: Debt payback ratios: Ofwat target¹⁸

	Water and sewerage companies	Large water only companies	Small water only companies
Debt payback period (EBITDA basis) ¹⁹	Max 5 years	Max 5 years	Max 5 years
Debt payback period (EBDA basis) ²⁰	Max 7 years	Max 7 years	Max 7 years

Table 3.3: Debt payback periods: Revenue caps as in the Strategic Review of Charges 2002-06

	Debt payback period in years			
	2002-03	2003-04	2004-05	2005-06
Strategic Review of Charges: EBITDA EBDA	5.2 7.9	4.9 7.2	4.1 5.5	4.0 5.3
WICS estimates: ²¹ EBITDA EBDA	4.8 7.0	5.2 7.7	4.9 6.9	5.2 7.5

It is clear that given the relatively slow initial progress in improving operating cost efficiency, Scottish Water's debt payback ratio would not have met the Ofwat standard if revenue caps had been set any lower.

It is also instructive to look at the level of investment delivered and the borrowing incurred. Total direct investment was broadly similar on both sides of the border. From 1996-97 to 2002-03, total capital investment, expressed per customer, was £1,061 in England and Wales, compared with £1,090 (excluding PPP) in Scotland²². Indirect investment through PPP delivered approximately £550 million of investment outputs. This is broadly equivalent to a further £260 of investment per customer. This suggests that effective investment over this period has been around 30% higher per customer than it was south of the border.

Borrowing has been used extensively in England and Wales and in Scotland to fund investment. Total reported borrowing for the companies in England and Wales in March 2003 was £20.46 billion²³. Expressed per customer,

¹⁸ Ofwat, 'Final determinations, Future water and sewerage charges 2000-05', page 151, Table 28: Ranges for critical financial indicators.

¹⁹ EBITDA is earnings before interest, tax, depreciation and amortisation.

EBDA is earnings before depreciation and amortisation.

²¹ Based on regulatory returns.

Water Industry Commissioner for Scotland, 'Investment and Asset Management Report 2000-02', Table 3.2, updated to include 2002-03.

Ofwat 'Financial performance and expenditure of the water companies in England and Wales', 2002-03 report, Table 7.

this amounts to around £920. The situation in Scotland is very similar, and expressed on a per customer basis the comparable borrowing figure for Scotland is £940. The £940 should, however, be increased to take account of financing costs included in PPP of approximately £260 per customer.

Improved performance monitoring

In the Strategic Review of Charges 2002-06, we sought ministerial approval for the annual reports on the performance of the industry in Scotland. We now publish three annual reports on:

- costs and performance;
- investment and asset management; and
- customer service.

These reports provide objective analyses of the current performance of the industry in Scotland. In future these reports will also serve as useful evidence of the improvements and better value for money that have been achieved.

Lessons learned from Scottish Water's response to the Strategic Review of Charges 2002-06

The Strategic Review of Charges 2002-06 highlighted a number of challenges:

- the need to improve efficiency;
- the potential threat of competition;
- the need to improve understanding of the condition and performance of assets; and
- the benefits to be gained from greater financial sustainability for the industry.

Scottish Water has responded well to these challenges, and customers will begin to see the benefits of this in the charge limits that we have set for the next regulatory control period 2006-10.

There are, however, three areas where we have sought to learn lessons from Scottish Water's response to the Strategic Review of Charges 2002-06. These are:

- presentation of the efficiency targets and consequently the way in which progress is measured;
- · definition of the capital programme; and
- the importance of focusing on core activities.

Presentation of efficiency targets

The efficiency challenge faced by Scottish Water in the 2002-06 regulatory control period consisted of two elements:

- an improvement in base operating costs (the efficiency gap that is quantified in the Strategic Review of Charges 2002-06); and
- an improvement in the level of services that should be provided to customers in order to match the levels of service provided south of the border.

We expected Scottish Water to meet any extra costs incurred in improving the level of service to the England and Wales average by reducing costs further in other areas.

This presentation of the efficiency targets (including a cash and a non-cash element) reduced the transparency of our monitoring. Understandably, Scottish Water sought to emphasise the full extent of the efficiency challenge that it faced, but we had to monitor performance against the targets that were agreed as part of the Strategic Review of Charges 2002-06.

In this draft determination we have changed our presentation of operating cost efficiency targets to improve the transparency of our performance monitoring. Rather than set targets that assumed both a reduction in cost and an improvement in the level of service, we have set targets in terms of total allowable operating expenditure (not including depreciation).

We have set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory control period. This is the amount that we have allowed to be funded through customer charges. It is made up as follows:

Figure 3.1: Calculation of total allowable operating expenditure

We will no longer refer to a monetary value for the total efficiencies required or to the overall percentage reduction required. However, if stakeholders want to count the total monetary value of the efficiencies required in this regulatory control period, in order to compare it with that used in the Strategic Review of Charges 2002-06, for each year they should add the following then adjust for annual inflation:

- efficiencies in baseline operating expenditure; and
- · efficiencies in new operating expenditure.

Definition of the capital programme

The lack of a clearly defined investment programme for Quality and Standards II has had a significant impact on customers. A typical example of this is planned improvements to the waste water system on the island of Arran. The former West of Scotland Water Authority made a number of statements about improvements to the waste water network on Arran. These included the intention to provide 'secondary' (biological) waste water treatment and allow for more properties to be connected to the public sewerage system.

Scottish Water has subsequently concluded that the required environmental standards can be met more effectively and efficiently through primary treatment, with longer sea outfalls. A number of residents in Arran are dissatisfied with the revised scheme, which they believe has limited the potential for development. In the absence of a defined investment programme, it has not been possible to determine whether the original waste water scheme for Arran that was contained in Quality and Standards II included funding for growth.

Our experience in seeking to define the capital programme after the Strategic Review of Charges 2002-06 has taught us the importance of having a fully defined capital investment programme. Our discussions with SEPA and the DWQR also lead us to conclude that the outputs to be delivered by each project must be clearly defined and quantified.

As a result we have taken a number of steps to ensure that the capital programme for 2006-10 will be better defined and that the customer will benefit fully from the improvements required by the Ministerial Guidance.

We are publishing the proposed investment programme alongside this Strategic Review of Charges 2006-10. Customers should therefore be able to track delivery of the improvements for which they are paying. This would help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

In addition, we are introducing a detailed substitution process by which Scottish Water will have to account in advance for any changes to the baseline investment programme. We have seen how, in Quality and Standards II, changing priorities, revised policies and practices, new technologies and new information may mean that outputs need to be amended.

Importance of focusing on core activities

In the Strategic Review of Charges 2002-06 we reviewed the experience of the privatised water and sewerage companies in England and Wales in generating additional sources of business from non-core activities. We also looked at the development of non-core activities in Scotland and their success or otherwise. We concluded that investment in new business by Scottish Water would need to be approached very cautiously.

The financing for any new ventures in Scotland – whether a small opportunity for a start-up with potential for organic growth, or an acquisition – must ultimately be obtained from customers of the core business or from taxpayers. We took the view that commercial opportunities should be carefully assessed, because even if the venture appeared to generate a return relatively quickly, there may be hidden costs (such as costs to exit the business), which could have an adverse impact on customers' bills in the future. There was also a risk that senior management would spend an undue amount of time on activities relating to the new venture.

Stakeholder criticisms of the Strategic Review of Charges 2002-06

Some stakeholders criticised the findings and recommendations of the review.

Areas of criticism included the following:

- the process of harmonising charges;
- the increase in fixed charges;
- that the industry should have been allowed to borrow more;
- that the efficiency targets were unreasonable;
- that there had been a lack of clarity in roles and responsibilities; and
- that we had not explained our logic, assumptions and answers sufficiently well.

We address each of these criticisms in turn. For each, we summarise the criticism and provide a response. In preparing the Strategic Review of Charges 2006-10, we

have learned from stakeholders' views about the 2002-06 Review. We have set out to address their concerns where possible.

The process of harmonising charges

Issues raised by stakeholders

There are three main criticisms that have been made about the harmonisation of charges. These are that there was insufficient communication, there should not have been harmonisation for non-household customers and that the process was completed too quickly.

Our response

In the Strategic Review of Charges, we highlighted the impact that harmonisation would have on different types of businesses. However, we accept that many of those that were adversely affected by harmonisation feel that there was insufficient communication with them about the issue. We believe that Scottish Water, the Scottish Executive and this Office can learn from this perceived lack of communication.

We have reviewed the argument that harmonisation for non-household customers should not have taken place. Our view is that there are two key alternatives: the first is to harmonise charges for all non-household customers; the second is to opt for fully cost-reflective tariffs for all non-household customers.

The first approach of harmonised charges is consistent with pricing in other utility and public good services (for example, Royal Mail). When charges are harmonised, there is no risk of a 'post code' lottery, ie where the price of the water and sewerage service varies according to where the customer is located.

The second approach of fully cost-reflective charges could make the service prohibitively expensive for those who are located in remote areas. This could also have an adverse impact on smaller businesses located in more urban areas. Additionally, if a larger customer were to opt for an 'off-network' solution, this could have

a dramatic impact on the bills of those customers located in the same water supply zone. We remain convinced therefore that harmonisation for all customers is in the long-term interests of all customers.

We have also reviewed the argument that harmonisation was introduced too quickly. Our analysis suggested that the impact would be less, and would affect fewer customers, if harmonisation were implemented swiftly. This was because the tariff regimes were so different for each of the three authorities. We also considered that it would have been difficult to justify much higher prices to some customers when an identical customer in a different part of Scotland was paying much less. Indeed, there was evidence that this was becoming an issue for some customers (for example, large water users in the north of Scotland) before the decision to merge the three former water authorities.

The increase in fixed charges

Issues raised by stakeholders

In the Strategic Review of Charges 2002-06, we argued that cost-reflective prices would play an important role in ensuring that larger water users chose to maintain their connection to the public system. Some stakeholders have objected to this. One of the objections is that the fixed charges were introduced too quickly and were not sufficiently well communicated. There were other objections from both metered and unmetered customers.

Standing charges were increased for metered customers. Metered customers with relatively low usage will suggest that they should pay for what they use. They assert that this is what happens in other utility services.

Our response

We would again accept that many customers felt that there had been insufficient communication of the impact of increasing fixed charges. There are lessons that we can learn from this. We have looked again at the issues raised by metered customers. Our view remains that the cost of supply is a function of peak consumption, rather than simply the total consumption. It seems to us that it is appropriate that all connected customers should make a contribution to the maintenance of the water supply and sewerage infrastructure. The increase in fixed charges is consistent with this. To delay the implementation of fixed charges would have been to accept that larger users should continue to make a greater contribution to the costs of maintaining the network.

A minimum charge was introduced for unmetered customers. The unmetered customer had always paid a fixed sum for the water and sewerage service. The amount depended on the rateable value of the property served. The unmetered customer was therefore objecting to the level of the bill, rather than the fact that the bill did not vary with volume.

Our view is that there is little merit in charging for water and sewerage services by rateable value. This means that a small city centre shop might pay more than a much larger shop in a rural area (even though the latter is probably much more expensive to supply). We believe that the minimum charges proposed by Scottish Water and agreed by us were not unreasonable. As an example, many rateable value customers paid less than Band A households.

The industry should have been allowed to borrow more

Issues raised by stakeholders

Some stakeholders have argued that if the industry had been allowed to borrow more, charges could have been kept at a lower level.

Our response

It is true that borrowing more during the 2002-06 regulatory period could have reduced bills for customers – but only at the expense of higher bills in the future. In effect, customers would have swapped an environmental and public health compliance backlog for an increased

debt. We discussed issues relating to our approach to debt in our methodology consultation²⁴. We did not receive any substantive objections to our proposed approach. We can see no merit in increasing debt faster than the economic value of net new assets. This would only make the industry less able to respond to shocks.

The efficiency targets were unreasonable

Issues raised by stakeholders

Scottish Water's trade unions have consistently argued that both our approach to setting efficiency targets and our assessed scope for efficiency were unreasonable. They argue that comparing the Scottish water industry's performance with that of the companies in England and Wales does not take account of:

- the industry south of the border being in the private sector;
- the different geographies and customer bases; and
- the higher level of investment that has been made south of the border.

Our response

Our efficiency assessments take full account of differences in assets, customer bases and geography. The Costs and Performance Reports and the Strategic Review of Charges describe these assessments. We can see no reason why customers should be asked to pay more because the industry remains in the public sector in Scotland. Indeed, given that the public sector benefits from a lower cost of capital, it is reasonable to argue that bills should be lower on a like-for-like basis in Scotland.

A lack of clarity in roles and responsibilities

Issues raised by stakeholders

Some stakeholders expressed their frustration that noone seemed to want to take responsibility for decisions, nor was it clear who was taking which decisions.

Our response

We agree that there was a perceived lack of clarity about roles and responsibilities. This was due to the nature of the regulatory regime that was in place at that time. This Office has a statutory duty to advise Ministers on the matters to be taken into account, and those to be left out of account, in setting charges for customers. Ministers could accept this advice, amend it (and give reasons) or substitute their own advice (and give reasons). Ministers will commission such advice relatively rarely.

Under the outgoing regulatory framework, each year we have been required to agree the detailed tariffs that Scottish Water proposes to charge. In proposing these tariffs, Scottish Water had to take due account of the advice that has been accepted by Ministers. We had to accept these tariffs if we believed that they were fully consistent with the advice accepted by Ministers. Ministers had no role in setting annual tariffs unless Scottish Water and this Office did not agree. While the legislative position was clear, we accepted that it could be difficult to understand that this Office had little decisionmaking discretion, that Scottish Water is bound to take account of our advice, and yet Ministers could not easily intervene unless they commissioned new advice. Under the new regulatory framework, which this draft determination contemplates, this Office will acquire a new determinative role. We are confident that this change will improve clarity as to roles and responsibilities.

A lack of explanation

Issues raised by stakeholders

Some stakeholders have commented that they found the explanations and reasoning put forward in the Strategic Review of Charges 2002-06 to be incomplete or confusing.

Our response

We tried to document our assumptions, logic and answers as completely as possible in the Strategic Review of Charges 2002-06. Given the amount of information that we use and the complexity of the analysis it can

²⁴ See Chapter 7, Volume 2 of our methodology, 'Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10'.

sometimes be difficult to explain each issue as fully as we might like. We had to strike a balance between the detail and length of the Strategic Review 2002-06 and the completeness of our presentation of our assumptions, logic and answers. We have provided much fuller explanations at this Review.

Changes to the legislative framework

There have been a number of changes to the legislative framework since the last Strategic Review. These changes are discussed below.

In 2002 the Water Industry (Scotland) Act, which had the principal function of establishing Scottish Water, also limited the function of this Office to the promotion of the interest of customers of the core business. In 2005, the Water Services etc. (Scotland) Act further strengthened the regulatory framework.

Water Services etc. (Scotland) Act 2005

The original purpose of the Water Services etc. (Scotland) Act 2005 was to introduce a framework for retail competition and to safeguard public health through introducing a ban on common carriage. It also sought to introduce regulation of trade effluent charges.

The original intention was that the Act should require the Water Industry Commissioner to introduce and administer a regime to license retail competition for 'non-household' (business and commercial) customers. The introduction of this framework has had a direct impact on this Strategic Review of Charges.

This framework is different to that which was introduced south of the border by the Water Industry Act 2003. The principal differences are that common carriage will not be allowed in Scotland, but that all non-household customers will be able to choose their supplier. Scottish Water will be required to establish an 'arm's length' subsidiary company to provide retail services to non-household customers. This is consistent with the recommendations on accounting and legal separation that we included in the Strategic Review of Charges 2002-06.

Proposals to strengthen the regulatory regime

The Water Services etc. (Scotland) Act 2005 has made a number of important changes to the regulatory framework. Its objective is to strengthen the regulatory framework for the water industry, and to ensure that there is a robust and transparent regime that operates in the interests of all customers. The Act includes measures to improve the accountability and transparency of economic regulation, including replacing the current individual Water Industry Commissioner with a body corporate, the Water Industry Commission for Scotland. The Act then goes on to give the Commission powers of determination over Scottish Water's charges.

In 2004 the financing of the water industry in Scotland came under scrutiny by the Finance Committee of the Scottish Parliament.

Part of the remit of the Committee was to investigate accountability within the water industry in Scotland. The Committee considered the role of the Water Industry Commissioner, and relationships with Scotlish Water, the Scotlish Executive and local authorities.

The Finance Committee published its findings in April 2004. The report included a recommendation to strengthen the regulatory regime:

"The Committee believes that an improved structure and support for the WIC is needed to ensure independent regulation and transparency across the industry. Modelled on some of the English and UK regulators, an Office of the Water Industry Commissioner, including a non-executive membership, could provide greater accountability and continuity for the Scottish water industry. Consideration should be given to whether certain decisions should be taken by the WIC in the context of advice from Ministers rather than the reverse."

The Scottish Executive agreed and included proposals in what is now the Water Services etc. (Scotland) Act 2005.

The changes to the regulatory regime are examined later in Chapter 4. Before reviewing these proposals, it is helpful to examine the components of UK regulatory policy that the Scottish Executive is proposing to introduce to the water industry in Scotland.

Regulatory functions

Broadly, a key function of regulators is to determine the charges levied by regulated companies. At a more detailed level, their functions are more far-reaching than simply the setting of charges. Typically, regulators' functions would also include the following:

- imposing conditions of appointment on industry participants;
- resolving disputes between industry participants and customers;
- · determining the basis and extent of charges; and
- dealing with the insolvency or failure of an industry participant.

These are wide-ranging functions, which will impact directly on industry participants and customers. To ensure that these functions are exercised properly, regulated companies have a right of challenge. There are two possible avenues for challenge – the Competition Commission and judicial review.

Appeal to the Competition Commission

If a regulated company disputes the regulator's charge limits, it can require the regulator to refer the determination to the Competition Commission.

The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators. Its involvement helps to ensure that the charge-setting process, carried out in the knowledge of a possible referral, is robust and transparent. If a case is referred to it, its decision will be binding. This check also ensures that regulators' decisions are subject to appropriate expert scrutiny.

Following a referral, the Competition Commission would initiate a process of determining the charge limits. Its functions are set by statute. Neither the regulator nor the water company requesting referral can narrow down or broaden out the Commission's functions. The matters that the Commission must take into account are the same as those taken into account by the regulator.

The Competition Commission's conclusions are binding, subject to judicial review by the Courts. Until the Commission makes its decision, the regulator's original determination stands. In practice, this means that all companies must implement the charge limits set in the regulator's determination until such time as the Competition Commission has reached a conclusion.

Once the Competition Commission has completed its inquiry and made its determination, the charge limits set by the regulator are replaced. The new limits would apply for the remaining years of the determination period.

Judicial review

In the UK, public bodies are generally subject to judicial review. In general terms, the purpose of judicial review is to protect citizens from abuse by ensuring that the powers and duties of government and other public bodies are exercised properly and lawfully.

Judicial review is the mechanism used by the Courts to review the way in which government Ministers or departments, local authorities and/or other public bodies exercise their powers and carry out their duties. It is concerned with the legality of the action or decision and the decision-making process rather than the actual merits of the decision itself.

Judicial review may be sought by a company, an individual or even a representative group that has a sufficient interest in the challenged decision, provided there is no other suitable means of redress available. In the present case, the possibility of appeal to the Competition Commission is likely, in relation to many points, to provide such a suitable alternative and to preclude the opportunity for seeking judicial review of the decision of the Commission.

Conclusion

We have examined the changes to the regulatory framework that have taken place since we completed the Strategic Review of Charges 2002-06. These changes have been introduced in the Water Industry (Scotland) Act 2002 and the Water Services etc. (Scotland) Act 2005. In general these changes have strengthened the role of regulation and should lead to improved transparency and accountability. In Chapter 4 we discuss the provisions of the Water Services etc. (Scotland) Act 2005 in more detail.

Chapter 4

Implementing the provisions of the Water Services etc. (Scotland) Act 2005

Introduction

In this chapter we examine the provisions of the Water Services etc. (Scotland) Act 2005 in more detail. In particular, we consider the impact that the creation of a Water Industry Commission with powers to determine charge caps has had on the Strategic Review of Charges 2006-10.

The Act strengthens regulation of the Scottish water industry and brings it into line with the regulation of utility and infrastructure businesses across the UK. This strengthened regulation should ensure that customers of the water industry in Scotland will continue to see an improvement in the value for money they receive.

The introduction of a competition framework will also bring benefits to customers, although it is likely that the benefits of this framework will only begin to be seen towards the end of the 2006-10 regulatory control period.

This chapter first considers the provisions of the Water Services etc. (Scotland) Act 2005. It then examines the appointment of the Commission, provides a timeline for the remainder of the Strategic Review of Charges 2006-10, and discusses the implications of the changes that result from the Act.

Functions of the Act

The Act has two main functions.

- It creates a Water Industry Commission to replace the current Water Industry Commissioner. The Commission will have the power to determine the maximum level of charges required to ensure that the objectives of the Scottish Ministers can be met at lowest reasonable overall cost. This contrasts with the current duty of the Water Industry Commissioner to provide advice on the level of charges required.
- It introduces a framework for competition in the water industry that is consistent with the social, environmental and public health objectives of the Scottish Ministers.

The Water Industry Commission for Scotland

The Commission will comprise a non-executive Chairman and four other non-executive members. The Chief Executive will also be a member of the Commission.

Other regulators have either already adopted Board structures or are moving towards them. Where they have been set up, Boards not only depersonalise regulation (through collective responsibility) but also bring relevant professional experience to bear on the work of the regulator (through non-executive directors with relevant professional expertise).

For example, the Gas and Electricity Markets Authority determines strategy and makes major policy decisions for Ofgem to implement. It comprises a Board of five executive and nine non-executive members, appointed by the Secretary of State for Trade and Industry. The non-executive directors have backgrounds in the commercial, financial, public sector and energy industry sectors.

In the water sector in England and Wales, the Water Act 2003 made provision for the Water Services Regulation Authority to be set up. This Board will replace the Director General of Water Services. However, the decision was taken not to establish the authority until after Ofwat had completed its 2004 price review.

In the communications sector, Ofcom's Board provides strategic direction for Ofcom. It comprises three executive and six non-executive directors. The non-executive directors have backgrounds in telecommunications, news media, journalism, property and economics.

The Office of Rail Regulation is led by a Board appointed by the Secretary of State for Transport. It has five executive and six non-executive directors. The nonexecutive directors have backgrounds in law, regulation, finance, customer service and railways. It replaced the Office of the Rail Regulator.

Determination of charge caps

This Strategic Review of Charges is being undertaken at a time of legal transition. It was, like the previous Review, commissioned by Ministers under the Water Industry (Scotland) Act 2002. However, unlike that Review, it is expected to result not in advice to Ministers on charges but rather in a charge determination made under the Water Services etc. (Scotland) Act 2005. In this section, we set out a description of the transitional regulatory framework under which we have undertaken the current review.

Water Industry (Scotland) Act 2002

Under section 33 of the 2002 Act, the Water Industry Commissioner must, when required by Ministers, advise them on the matters to be taken into, or left out of, account by Scottish Water in fixing charges in charging schemes. In preparing this advice (which is to apply in relation to charges schemes made during such period as Ministers may specify) the Commissioner is to have regard (in addition to guidance and directions from the Scottish Ministers) to such matters as (a) the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions, (b) the likely cost to Scottish Water, for the period of the advice, of exercising such functions at the standard or level specified by Ministers and (c) the likely resources, other than income from charges for goods and services, available to Scottish Water for the period of the advice.

Ministers must, within three months of receiving this advice from the Commissioner, either accept the advice, with or without modifications, or reject the advice and substitute their own advice for it. The Commissioner must publish the advice as accepted, modified or substituted, together with any reasons given by Ministers for any modification or rejection.

Currently, when Scottish Water makes a charges scheme and when the Commissioner and Ministers consider whether to approve such a scheme, each must, under section 31 of the 2002 Act, have regard to any advice published under section 33 in force at the time of the making of the scheme.

Water Services etc. (Scotland) Act 2005

Section 21 of the 2005 Act (which has not yet been commenced) repeals sections 31 and 33 of the 2002 Act. It also inserts a number of new provisions into the 2002 Act which, when commenced, will establish a new legal framework under which Scottish Water levies charges on its customers. These are considered below.

Under section 29A of the 2002 Act, Scottish Water must in future make a charges scheme by reference to a determination made under section 29B by the new Water Industry Commission established under the 2005 Act. In particular, Scottish Water's schemes may not fix charges in excess of any maximum set by virtue of the determination.

Section 29B of the 2002 Act requires the Commission (see above) to determine maximum amounts of charges by reference to which a charges scheme is to be made and provides that these maximum amounts apply in relation to such period as the Scottish Ministers may specify. The Commission is to publish a draft determination on which it must consult prior to taking its final decision.

The Commission must pursuant to section 29C:

- a) exercise its functions to make such determinations for the purpose of ensuring that (so far as is consistent with compliance with point (b) below) charges schemes give effect to any statement of policy regarding changes made by Ministers under section 29D:
- b) exercise those functions for the purpose of ensuring that (so far as is consistent with Scottish Water complying with its statutory obligation to secure that its annual income is not less than its annual expenditure). Scottish Water's receipts from (i) its income from charges for services provided in the exercise of its core functions and (ii) any grants made, sums borrowed or any other resources reasonably available to it for the purposes of the exercise of those functions, are not less than sufficient to meet the expenditure required for the effective exercise of those functions; and

c) in exercising those functions, have regard to any guidance issued to Scottish Water by Ministers and any directions given to Scottish Water under section 44 or 56 of the 2002 Act, so far as relevant in relation to charges schemes.

Section 29G of the 2002 Act provides that, in relation to point b) above, Scottish Water is to be taken to be exercising its core functions effectively if (in discharging its statutory duties and contractual obligations relating to the exercise of those functions) it makes such use of its resources that, year on year, it achieves at the lowest reasonable overall cost the objectives contained in any directions given by reference to new section 56A of the 2002 Act.

The Commission may also review the maximum charges set under a determination by virtue of section 29F of the 2002 Act where, since the determination was made, there has been or is likely to be a material change in the income available to Scottish Water or expenditure required for the effective exercise of its core functions. A review of this sort might result in the revision of the maximum charge level set in the determination.

An important component of the new framework is that Scottish Water will have the right (to be introduced by a statutory instrument made under the Scotland Act 1998) to require the new Commission to make a reference to the Competition Commission in respect of its determination.

Once the Commission has set maximum limits for Scottish Water's charges, Scottish Water will be required to propose a detailed charges scheme. The scheme must adhere to the maximum charges set out in the Commission's determination. It is expected that Scottish Water will be asked to propose charges schemes on an annual basis.

An important feature of the proposals in the Act is that Scottish Water will no longer have a general discretion to make agreements with individual customers about their charges. Instead, all charges must be made by reference to a charges scheme, save for any departures from the charges schemes which will have to be specifically authorised by the Commission on the basis that the charge-payer has taken actions that reduce the

cost to Scottish Water of providing services to them and the departure is otherwise justified in the circumstances of the case. The Act does not allow for existing agreements to be renewed or extended, but it does contain a specific provision that existing agreements may continue until they expire.

Principles of charging for water services

In February 2005, Ministers published a proposed 29D statement which they intended formally to make following enactment of the 2005 Act. Certain elements of this statement are set out below (a fuller description is contained at Chapter 14 of Volume 4).

Minister's proposals were informed by an extensive consultation exercise, which the Scottish Executive undertook during the summer of 2004. 'Paying for Water Services 2006-10' set out the Scottish Executive's views on the principles that should underpin charging and the application of those principles. It also invited responses on the proposals. Views expressed by customers and other interested parties were taken into account in the proposed section 29D statement.

The proposed section 29D statement sets out two objectives, namely, that Scottish Water should achieve the maximum affordable improvements in public health and environmental protection, and support housing in communities across Scotland through investment in new water and sewerage capacity. The new Commission should determine charge limits that will enable Scottish Water to achieve its objectives and improvements in its operating performance on the basis of charges that are affordable and stable across the review period and sustainable in the long term. In particular, Ministers have indicated that an objective for the Commission is to keep average charge constant in real terms during the Review period. However, stable charges ar not to be secured at the expense of Scottish Water's longer-term financial stability: Scottish Water's financial strength should be maintained over the period 2006-10, or if possible improved slowly over that time.

The proposed statement also provides that the maximum sum that Ministers have set aside for lending to Scottish Water in each of the years 2006-10 is £182 million,

pending the charge determination and the new Commission's decision on the sustinable level of borrowing required to underpin the determination and Scottish Water's investment programme. In addition, it states that public expenditure support to Scottish Water in the provision of its core services throughout the period 2006-10 will take the form of lending alone and that no grant will be paid in respect of these services during the period.

Introduction of a framework for competition

The Water Services etc. (Scotland) Act 2005 includes provisions requiring the Water Industry Commission to introduce and administer a regime to license retail competition for 'non-household' (business and commercial) customers. We propose that the licensing regime should be in place in Scotland by April 2008.

The key provisions in the Act are as follows:

- Prohibitions on common carriage²⁵ and on the provision of water and sewerage services to households by anyone other than Scottish Water.
- A power for Ministers to require Scottish Water to establish a separate retail business – effectively establishing Scottish Water's retail business as a 'provider' that will be subject to the same licensing regime as all other 'providers' of water and sewerage services.
- A regime, to be introduced and administered by the Water Industry Commission, which will license 'providers' of retail water and sewerage services to non-household (ie business or commercial) customers. This provision effectively permits competition in the retail of water and sewerage services.

These provisions are examined in greater detail below.

Prohibiting common carriage on public networks

The Scottish Executive decided that common carriage on public networks should be prohibited. It believed that if third parties had access to the networks this would pose risks to public health and the environment. It believed this

would compromise Scottish Water's ability to manage the network safely. In its view, the consequences of common carriage could include contamination of the public water supply, interruptions to the water supply and damage to the public infrastructure resulting in a threat to public health. Similarly, on the waste water side, they considered that there could be pollution, including sewage flooding, interruption to the supply and again damage to the public infrastructure — threatening public health and the environment.

The Executive concluded that the risks to public health and the environment would outweigh any foreseeable benefits that might arise from competition in treatment services. The Water Services etc. (Scotland) Act 2005 therefore includes the provision that no-one other than Scottish Water can use the public networks to carry out the physical supply of water or sewerage services.

Establishing retail competition to non-household customers

The Act contains provisions which allow for retail competition to non-household customers. Although Scottish Water retains sole responsibility for treatment and distribution on the public networks, it will be able to treat water or waste water for a third party 'retailer'. The Act changes Scottish Water's role from its present role of supplier in that while it will continue physically to supply water and sewerage services, it will do so on behalf of the retailer. It will be the retailer, rather than Scottish Water, who will have the direct commercial relationship with the customer.

The Act restricts retail competition to non-household customers only. This reflects the Scottish Executive's view that retail competition poses risks for households. The Executive is concerned about the impact that introducing retail competition for households could have on the link between charges and the Council Tax band of the property served (and as a result the discounts applied, for example to single adult households). The Scottish Executive regards the link between Council Tax bands and water charges to be an important element in its social inclusion policy. In the view of the Scottish Executive, this link should mean that charges broadly reflect ability to pay.

^{25 &#}x27;Common carriage' — where Scottish Water would use its system of water mains to carry water treated by a competitor to the competitor's customers, or where it would use its sewers to carry waste water from a competitor's customers to the competitor's treatment works.

The approach taken in the Act differs from that which has been introduced south of the border. In England and Wales, the Government decided to phase the introduction of competition through the use of thresholds. At present, only premises using more than 50 megalitres of water a year are eligible for competition. These thresholds are important because they seek to ease the transition to common carriage. Common carriage raises practical issues for the incumbent water provider relating to how to manage the impact of new entrants gaining access to its infrastructure. Common carriage can also lead to the problem of 'stranded assets', that is treatment works which the incumbent no longer requires.

Establishing a licensing regime

The Act introduces a licensing regime, the purpose of which is to ensure that all customers served by the public networks are treated in an equal way. It is important that, with the introduction of competition, retailers pay a fair wholesale price that disadvantages neither businesses nor household customers. The licensing regime will be established and operated by the new Commission.

The Act introduces two types of licence:

- A water services retail licence the purpose of which is to establish a legal right for the holder of such a licence to enter into contractual agreements for the provision of water services with non-household customers on the public networks.
- A sewerage services retail licence the purpose of which is to establish a legal right for the holder of such a licence to enter into contractual agreements for the provision of sewerage services with nonhousehold customers on the public networks. This licence will cover trade effluent services, although it will not affect Scottish Water's responsibility for monitoring compliance with trade effluent consents and agreements.

The Act places a duty on the Commission to monitor compliance with the terms and conditions of licences and to take any action necessary to ensure compliance. Licence conditions will ensure that retailers meet their obligations to contribute towards the costs of maintaining the public networks. In granting licences, the Commission

will be required to satisfy itself that the applicant has the financial strength and the operational and managerial capacity to meet their licence conditions as a retail supplier.

The Commission will administer the licensing regime on the basis of regulations made by Ministers. The regulations will be the subject of consultation before being given effect in secondary legislation. Their purpose will be to ensure that there is a transparent, fair and proportionate process by which the Commission considers licence applications, grants licences and subsequently monitors compliance with licence conditions.

The Act also confers a duty on the Commission to exercise its licensing functions in such a way as to ensure that the interests of all customers served by the public networks continue to be safeguarded. In particular, it provides a duty on the Commission to ensure that the new regime operates in a way that is not to the detriment of water customers as a whole.

The Act also requires the Commission to exercise its licensing functions to secure the participation of retailers in an orderly manner. The Commission will be able to direct Scottish Water or retailers (actual or prospective) to provide or exchange information.

The Act gives Scottish Ministers the power to direct Scottish Water to establish a subsidiary, with a view to ensuring the separation of its statutory and licensed activities. The Scottish Water retail business will be in direct competition with other retailers, and must not use or be thought to be using its position as sole provider of wholesale services to put its competitors at a disadvantage. The retail arm will be subject to the same regulation as other retailers.

Timeline for the introduction of new tariffs

The final determination of prices will be issued at the end of November 2005 by the Water Industry Commission. It is likely to include a series of charge caps for each of the tariff baskets that we have identified in Volumes 3 and 7 of this draft determination. Scottish Water will then propose a series of tariffs that are consistent with these general charge caps. The new tariffs will take effect from April 2006.

Table 4.1: Timeline for the introduction of new tariffs

July 2005	The Water Industry Commission assumes responsibilities for the Office of the Water Industry Commissioner for Scotland.
July– September 2005	Stakeholders have the opportunity to make representations on the draft Strategic Review of Charges 2006-10 in the period between 1 July 2005 and 23 September 2005. Representations should highlight issues that stakeholders believe have not been taken sufficiently into consideration. Stakeholders should highlight the consequences and impact of their representations both on those who would benefit and those who would lose out.
23 September– 30 November 2005	The Water Industry Commission considers representations on the draft determination. In the light of representations from stakeholders, the Commission produces and consults on its own draft determination. The Scottish Executive may also decide whether to amend its objectives for Scottish Water during the regulatory control period.
30 November 2005	The Water Industry Commission makes and publishes its final determination. The charge limits set in the final determination will apply to the scheme of charges that is to come into effect on 1 April 2006.
December 2005	Scottish Water submits to the new Water Industry Commission for approval its scheme of charges for 2006-07. The Commission will approve the scheme of charges if it determines that Scottish Water's proposals are consistent with the final determination, published in November 2005.
February 2006	This is the deadline for Scottish Water to appeal to the Competition Commission. In the event that Scottish Water decides to appeal to the Competition Commission against the limits, the limits will continue in effect until the Competition Commission comes to a decision on the appeal.
April 2006	New tariffs come into force.

Implications of establishing the new Water Industry Commission for Scotland

Scottish Ministers will set the public policy framework and act as owners of Scottish Water. Responsibility for decisions on setting charge limits will pass to the new Commission.

We welcome provisions in the Act that give the Commission the power to decide charge limits within a policy framework set by Ministers. This will ensure that authority and responsibility are aligned. The responsibility for each decision will be clear and unambiguous. This should be easier to understand than the previous system where Ministers had to take decisions on the basis of the Commissioner's advice.

The Commission will operate within a ministerial policy framework. Scottish Water's right of appeal against the Commission's decisions to the UK Competition Commission is an important safeguard.

We believe that the Act strengthens the regulatory framework in Scotland and will help improve both actual and perceived accountability. The establishment of a Commission should depersonalise regulation – a Commission arriving at a joint decision is likely to be considered more accountable than an individual with a similar responsibility.

Implications of the framework for competition

One of the key challenges for the Strategic Review of Charges 2006-10 has been to set reasonable wholesale and retail charge caps. There has been no precedent in the water industry for the assessment of a charge cap for the wholesale service. This review has set retail charge caps for household customers and an overall level of wholesale charge caps for the 'non-household' customers. In effect this has required us to decide the appropriate cost and profit of a retailer (ie the difference between retail and the overall level of wholesale charges).

When retail competition was introduced into the energy market, regulators continued to set a limit for retail charges for a period after the introduction of competition. We believe that regulation of retail charges until competition is properly established will be important as it will help to ensure that there is an orderly, sustainable market.

The overall level of wholesale charges is critical. If it is too high, new entrants will not be able to cover their costs and consequently will not enter the market. If it is too low, the core business of Scottish Water would suffer and retailers could make excessive profits.

We have sought to involve stakeholders so that all interested parties can understand how we set the overall level of wholesale charges. We did this by outlining a very detailed work plan for the Strategic Review of Charges 2006-10²⁶. We also arranged a number of stakeholder information days.

We considered that this consultation was important for the following reasons.

²⁶ 'Our work in regulating the Scottish water industry: setting out a clear framework for the Strategic Review of Charges 2006-10', July 2004.

- New entrants are likely to want reassurance that Scottish Water is not able to subsidise or offer favourable terms to its new retail entity in order to retain customers. Without this reassurance, new retailers would be discouraged from entering the market or could challenge the incumbent under competition law.
- If the overall level of wholesale charge has not been properly set, there will be an unintended crosssubsidy either to or from non-household customers in the new competitive market – at the expense, or to the benefit, of Scottish Water's household customers.

The commissioning letter for the Strategic Review of Charges 2006-10²⁷ required us to set 'charges limits' rather than 'revenue caps'.

A revenue cap allows the balance of revenue between customer groups to be altered; it also allows for tariffs to be increased to reflect the loss of part or all of a customer's business. It is in the general customer interest that Scottish Water should seek to reduce costs to counter any fall in revenue. However, under a revenue cap Scottish Water could seek to increase tariffs to captive customers to maintain its revenue.

A charge cap can prevent such rebalancing. It limits the increase in a particular tariff rather than the increase in revenue (all of the charges multiplied by all of the services provided). Setting charge caps has, however, required us to collect more information.

Conclusion

The Water Services etc. (Scotland) Act 2005 has strengthened the regulatory framework in Scotland. Customers of the Scotlish water industry can therefore look forward to further improvements in value for money.

The revised regulatory framework also clarifies roles and responsibilities, and as a result should reduce uncertainties for customers and other stakeholders.

²⁷ Letter from the Minister for Environment and Rural Development Ross Finnie MSP, dated 26 May 2004 to Alan Sutherland, Water Industry Commissioner for Scotland.

Chapter 5

Other inputs to the Strategic Review of Charges 2006-10

Introduction

In the previous chapter we discussed the impact on the Strategic Review of Charges 2006-10 of the regulatory changes that were introduced in the Water Services etc. (Scotland) Act 2005. This chapter outlines the other major factors that have influenced this draft determination. Some of these factors were introduced in the Minister's February statement of the objectives for the water industry. We have also taken full account of other inputs including regulatory returns and letters, Scottish Water's business plans and the recommendations of the Finance Committee.

Scottish Executive consultations and inputs

The ministerial statement of the objectives for the water industry in Scotland was an important input to this Review. It provided information about the investment priorities that must be delivered and the principles of charging that should underpin the draft determination. The statement also set the borrowing limits that apply (or are likely to apply) during the four-year regulatory control period. The ministerial statement was informed by the Quality and Standards process and the Principles of Charging consultation. This statement is discussed in detail in Chapter 16 of Volume 4. We discussed the two Scottish Executive consultations in our methodology publications²⁸.

Quality and Standards process

Quality and Standards III provided advice to Scottish Ministers about the investment priorities for the period 2006 to 2014. This Strategic Review of Charges 2006-10 covers only the first half of that period.

At the start of the Quality and Standards III process, the Scottish Executive established a project board comprising a number of stakeholders. The board has had overall responsibility for developing the options to be included in the Quality and Standards III consultation.

Detailed definition of the required investment was delegated to a number of specialist groups, each of which was responsible for a work package. These work packages included:

- maintenance;
- growth in the water and sewerage networks;
- environmental improvements;
- drinking water quality; and
- other important issues for customers.

Each work package identified investment 'drivers'. The performance of Scottish Water's assets relative to the identified investment drivers at the end of the Quality and Standards II investment programme was assessed.

Scottish Water was then asked to cost the gap between the expected position at the end of Quality and Standards II and each of the identified scenarios. The specialist groups responsible for work packages each submitted an interim report to the project board in April and May of 2004. These interim reports were used by the Scottish Executive to inform the Quality and Standards III consultation.

Ministers' decisions were supported by a wide-ranging public consultation about Quality and Standards III ('Investing in Water Services 2006-10 – The Quality and Standards III project: A consultation paper', published in July 2004). Their decisions were also informed by independent research²⁹.

Quality and Standards III has noted that substantial investment in water quality and environmental performance is likely to continue for the foreseeable future. In its Quality and Standards III consultation, the Scottish Executive states³⁰:

"What is certain, is that substantial expenditure on the improvement of the water environment will be required for very many years to come, for Quality and Standards III and beyond."

²⁸ Volume 3, Chapter 2 – 'Paying for water services 2006-10' and Volume 5, Chapter 2 – 'Investing in water services 2006-14'.

²⁹ This market research, conducted by MORI and broadly similar to research conducted in England and Wales, was published in February 2005 with the Ministerial Guidance on the investment programme. Available at www.scotland.gov.uk

³⁰ Scottish Executive, 'Investing in water services 2006-14', page 31.

Principles of Charging consultation

The Minister's statement of the objectives for the water industry and the borrowing limits that have been set was also informed by the Principles of Charging consultation. When the consultation was announced, the Deputy Minister for Environment and Rural Affairs stated that:

"We anticipate this [Principles of Charging consultation] will cover the full range of concerns raised, including the total size of bills, the appropriate mix of fixed and volumetric charges for all types of customer, whether alternatives to the use of rateable values can be used in the calculation of charges, the extent to which metering should be encouraged, what kinds of discount and cross-subsidy are appropriate, what sustainable use of water should mean in practice and how all of these compare with England and Wales."

We believe that it is important that customers understand, in a transparent manner, the likely charges they will pay over the 2006-10 period. These charges will be affected by both the total revenue requirement and by the way charges are allocated between customer groups. Ministers have set these overall charging policy objectives; we explain how these will impact on customers.

Ministerial Guidance

Scottish Ministers have so far provided:

- initial high-level guidance in May 2004 in the commissioning letter for the Strategic Review of Charges 2006-10; and
- detailed guidance in the Ministerial statement made in February 2005.

Ministers may provide final guidance at the end of August 2005, after the draft determination of charges is published.

The initial high-level guidance outlined the factors for us to take into account in preparing this draft determination. It covered the broad arrangements that the Scottish Executive wanted the Strategic Review to follow and provided the Scottish Executive's initial views on the

public policy considerations to be taken into account. The guidance also dealt with issues such as the period of the Strategic Review, public expenditure constraints and allowable financial parameters.

The detailed guidance from Ministers issued in February 2005 outlined:

- the objectives and standards that the Scottish Executive requires Scottish Water to achieve during the Strategic Review period;
- the Scottish Executive's assumptions about public expenditure and Scottish Water's borrowing limits in the period; and
- the principles that the Scottish Executive wanted to be applied in setting charge limits at the conclusion of the Strategic Review.

Regulatory returns and letters

Information is critical to effective regulation. We request information through a series of regular information returns and through regulatory letters. These regulatory requests can either be specific one-off requests or may initiate an additional regular request for information.

Annual Return

The WIC Annual Return is the largest single information request that we issue to Scottish Water each year. The format of the Annual Return is based closely on Ofwat's June Return; the information it collects is also similar, allowing us to benchmark Scottish Water with the companies in England and Wales. To ensure that the return is wholly applicable to Scotland, and that it covers circumstances which are specific to Scotland (such as PPP costs), we extended the scope of the original Ofwat return in some areas.

The Return is a robust and detailed set of information about each area of the water and waste water business and all associated costs. It consists of 12 separate sections and comprises 97 tables, with more than 20,000 items of both input and calculated information. The Return focuses in the main on information relating to the previous

financial year; however in some cases it also seeks forward projections. Each line of information requested has a precise and documented definition.

We now publish the Annual Return on our website.

Monthly financial performance reports (RAB Returns)

These financial reports are submitted to this Office on a monthly basis. They provide a detailed breakdown of Scottish Water's financial performance over the preceding month and chart progress against annual budgets. This allows monthly monitoring of progress against the financial targets set out in the Strategic Review of Charges.

The format of the monthly financial report is defined in the 'WIC 25'31 letter that was sent to Scottish Water in January 2002. The key elements of the Return are as follows.

At the start of each year:

budget forecasts.

On a quarterly basis:

- analysis of above-ground fixed asset cost and depreciation;
- analysis of infrastructure asset cost and depreciation;
- analysis of total assets;
- cost of capital; and
- analysis of exceptional items and asset disposals.

On a monthly basis, information for the previous month (actual and budget):

- income and expenditure;
- balance sheet;
- changes in working capital;
- cash flow;
- casii ilow,

- · reconciliation of operating surplus to net cash flow;
- summary analysis of fixed assets;
- income analysis water;
- income analysis waste water;
- analysis of operating costs; and
- audit trail of revisions to forecasts.

The financial reports form an important component of our ongoing monitoring of Scottish Water's performance. They provide a good indication of trends in performance and the rate of progress towards targets. They also supplement the information provided in the Annual Return. The accompanying commentary provides explanations for variances against annual targets and allows areas of concern to be quickly identified.

Quarterly Capital Investment Returns

An important part of the regulatory process is monitoring the delivery of the capital investment programme. It is vital that customers are aware of how effectively, and how efficiently, Scottish Water is spending this money.

Each year, in the Annual Return, Scottish Water submits detailed information about the investment carried out in the previous financial year. It also provides an investment plan for future years.

To supplement this annual information, and to provide closer monitoring of investment delivery, we also requested (in regulatory letter WIC 2) a Capital Investment Return (CIR) on a quarterly basis. The CIR provides summary information, at a project level, on the financial and physical delivery of the investment programme. For each project in the investment programme, the information provided in the CIR includes:

- forecast and actual project spend;
- explanations of financial variances;
- total forecast spend on the project;

³¹ This letter is available on our website.

- investment programme budget for the project; and
- physical progress of the project against defined milestones.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays.)

The CIR has now been brought under the auditing regime of the Reporter.

WIC 5 Customer service performance return

This quarterly information return requires Scottish Water to report on customer service performance. This is a detailed report, intended to cover the major areas of customer service. The information required in each report includes the number of:

- written contacts received by Scottish Water in the quarter;
- telephone contacts received by Scottish Water in the quarter;
- enquiries received by Scottish Water and their speed of response in the quarter;
- complaints received by Scottish Water, complaint type and speed of response in the quarter;
- telephone calls received, answering speed by call centre staff and number of calls abandoned by the customer, in the quarter;
- planned interruptions of supply, and Scottish Water's response time to these, in the quarter;
- unplanned interruptions of supply, and Scottish Water's response time to these, in the quarter;

- septic tanks emptied by Scottish Water in the quarter and their response time to requests from customers for tanks to be emptied;
- sewer flooding incidents dealt with by Scottish Water in the quarter;
- appointments kept in the quarter, where Scottish Water staff may go out to visit a customer either in the morning, afternoon or during a specific two-hour time band; and
- Guaranteed Minimum Payments made in the quarter, where Scottish Water has had to make a payment to customers for failure to meet their guaranteed minimum standards of service.

This information allows us to monitor customer service performance on a quarterly basis. It enables us to spot trends and seasonal variations and provides supporting information for analysis of particular customer service issues.

Regulatory letters ('WIC' letters)

Our regulatory letters are similar to the Managing Director (MD) and Regulatory Director (RD) letters that Ofwat sends to the companies in England and Wales. The WIC letters often ask for information relating to various aspects of Scottish Water's activities that would not otherwise be collected as part of the regulatory regime. These information requests are vital to the analysis performed by our Office.

Each letter is given a unique code and title for ease of reference and may be reissued when a request for information needs to be repeated. Where appropriate (for example with CIRs), the Reporter is asked to scrutinise the responses to WIC letters from Scottish Water. Copies of the WIC letters we issue are also sent to the Scottish Executive and are published on our website. A list of WIC letters issued to date is presented in Table 5.1. The letters are reported in full in the Appendices

Table 5.1: Summary of WIC letters

Reference	Title	Date of first issue
WIC 1	Commercially sensitive customer revenue	07.4 1.0000
WIC 2	information and data request Planned investment programme	27 April 2000 2 May 2000
WIC 3	Review of infrastructure renewal and	2 Way 2000
	maintenance	22 May 2000
WIC 4	Household data request	8 August 2000
WIC 5 WIC 6	Customer service performance reports	21 June 2000
WIC 7	Quality performance assessments Scheme of charges 2001-02	22 August 2000 6 October 2000
WIC 8	Dates for submission of information project data	10 November 2000
WIC 9	Non-domestic debt data request	20 December 2000
	-	
WIC 10	Information project action plan	28 February 2001
WIC 11	Not used	-
WIC 12 WIC 13	New opex and 'spend to save' Efficiency analysis: impact of PPP schemes	7 March 2001 7 May 2001
WIC 13	Special agreements for large customers	18 May 2001
WIC 15	Capital investment and efficiencies	18 May 2001
WIC 16	Development constraints and rural sewage	•
	connections	28 May 2001
WIC 17 WIC 18	Data accuracy	29 May 2001
WIC 18	Quality and Standards final output Investment appraisal project	30 May 2001 1 June 2001
WIC 19	Request for data relating to depots, laboratories	1 Julie 2001
	and office buildings	6 June 2001
WIC 21	Critical information for the Strategic Review of Charges	29 June 2001
WIC 22	Customer revenue information and data request	19 October 2001
WIC 23	Capex monitoring	21 November 2001
WIC 24	Leakage	21 December 2001
	·	
WIC 25	Monthly submission of RAB tables	11 January 2002
WIC 26	Revised action plans	15 January 2002
WIC 27 WIC 28	Dates for submission of information to the WIC Procedure for information returns	8 February 2002
WIC 28	WIC Annual Return	2 April 2002 12 April 2002
WIC 30	Accounting separation	4 October 2002
WIC 31	Dates for submission of information to the	17 March 2002
WIC 32	WIC 2003-04 Quality and Standards I	17 March 2003 11 February 2003
WIC 33	Annual Return 2003-04	11 April 2003
WIC 34	T tables 2003-04 to 2005-06	1 April 2003
WIC 35	Scheme of charges 2004-05	Not issued
WIC 36	Regulatory dialogue and progress monitoring	28 August 2003
WIC 37	Data for serviceability models	30 September 2003
WIC 38	Publication of Annual Return and investment programme information	22 October 2003
WIC 39	Ongoing development of Quality and Standards	
	II capital investment programme	22 October 2003
WIC 40	Strategic Review of Charges 2005	12 December 2003
WIC 41	Reconciliation of WIC 18 with Finance	
	Committee submission	2 March 2004
WIC 42	Dates for submission of information to the WIC	0. 4! 1.000.4
WIC 43	2004-05 Annual Return 2003-04	8 April 2004 23 April 2004
WIC 43	Finalisation of the WIC18 baseline for Quality	23 APIII 2004
	and Standards II	12 May 2004
WIC 45	Draft accounting separation tables	27 May 2004
WIC 46	Strategic Review of Charges – First draft business plan submission	25 June 2004
WIC 47	Strategic Review of Charges 2006-10	20 Julie 2004
	 Delivery of Quality and Standards II 	11 October 2004
WIC 48	Costs estimates for the Quality and Standards	13 October 2004
WIC 49	III Quality programme Proposed Schemes on Arran	15 October 2004
WIC 50	Public Private Partnership schemes	11 November 2004
WIC 51	Potential for Quality and Standards II overhang	19 November 2004
WIC 52	Trade effluent customer information	24 November 2004
WIC 53	Strategic Review of Charges – Second draft	9 Doggerhan 2004
WIC 54	business plan submission Request for information relating to water and	8 December 2004
VVIO 34	wastewater treatment plants	14 December 2004
WIC 55	Strategic Review of Charges – regulatory	42 Desember 2004
WIC 56	accounts Ofwat cost base for benchmarking Scottish	13 December 2004
**10 00	Water's investment plan	20 December 2004

Reference	Title	Date of first issue
WIC 57	Corporation Tax	3 February 2005
WIC 58	Public Private Partnership Contracts	3 February 2005
WIC 59	Strategic Review of Charges 2006-10: Regulatory Capital Value and allowed Rate of Return	3 March 2005
WIC 60	Dates for submission of information to WIC 2005-06	22 April 2005
WIC 61	Annual Return 2004-05 submission	22 April 2005
WIC 62	Request for increased information on Scottish Water's 2nd draft business plan investment programme	22 April 2005

Other correspondence

We may sometimes require clarification from Scottish Water regarding a range of other issues that are not covered in the WIC letters. These are dealt with in separate correspondence. All such correspondence relating to this draft determination is available on our website.

Scottish Water's business plans

We set out a clear process and framework for the Strategic Review of Charges in the summer of 2004. This included a detailed work plan. This plan highlighted the opportunities for stakeholders to comment on our approach and to remain abreast of our thinking on the key issues addressed in this draft determination.

An important element of our approach was the submission of two business plans by Scottish Water. We issued detailed guidance to Scottish Water on the scope to be covered and information to be included in these business plans.

The business plan submissions supplemented the information contained in the standard regulatory returns and set out Scottish Water's strategy and objectives for the coming period.

Scottish Water was required to submit a first draft business plan, followed by a second draft business plan that was submitted to us and to the Scottish Executive. The process for each of these submissions was essentially the same. The first draft business plan enabled us to do much of the preparatory work for the Strategic Review of Charges 2006-10. The second draft business plan informed our conclusions on charges for this draft determination.

The timetable of key dates relating to the business plan process is outlined below in Table 5.2.

Table 5.2: Key dates in the business plan process

Date	Event
First draft b	usiness plan
25/06/2004	WICS issue guidance on first draft business plan
05/07/2004	Scottish Water's initial issues to WICS
08/07/2004	Workshop on guidance
16/07/2004	Scottish Water's final issues to WICS
21/07/2004	Guidance to Reporter issued by WICS
28/07/2004	WICS' clarification of Scottish Water issues
01/09/2004	Draft investment plan to Reporter for audit
29/10/2004	Scottish Water submits first draft business plan to WICS
15/11/2004	Workshop on clarification of issues
23/11/2004	Scottish Water Board presentation on key strategic issues
03/12/2004	WICS' response to first draft business plan
Second dra	ft business plan
08/12/2004	Publication of guidance for second draft business plan
14/12/2004	Scottish Water's initial issues on guidance to WICS
17/12/2004	Workshop on second draft business plan guidance
17/12/2004	Guidance to Reporter issued by WICS
23/12/2004	Scottish Water's final issues on guidance to WICS
10/01/2005	WICS final clarification/response to Scottish Water's issues
09/02/2005	Final guidance from Ministers
20/04/2005	Scottish Water submits second draft business plan to WICS
04/05/2005	Workshop on detail of second draft business plan
12/05/2005	Scottish Water Board presentation on key strategic issues
16/05/2005	Publication of high-level summary of Scottish Water's business plan

Recommendations of the Finance Committee

In November 2003, the Finance Committee agreed the following remit for an investigation by two of its members.

"To investigate the following issues:

- accountability looking at the role of the Water Industry Commissioner, the relationship with Scottish Water, the Scottish Executive and local authorities;
- structure looking at water charging and debt management;
- investment looking at capital projects, the profile of procurement and borrowing, billing and financial management; and to suggest potential areas for the questioning of Scottish Water and the Water Industry Commissioner...."

The Committee published its report in April 2004. The Scottish Executive made an initial response almost immediately and a further response on 14 June 2004. We responded to the Committee at the beginning of June 2004.

The Committee's findings have been an important input to this draft determination.

Conclusion

This draft determination takes account of a wide range of information and inputs, including:

- the Scottish Executive's input through its Ministerial Guidance statements, which has been key to this draft determination;
- information that has come directly from Scottish Water; and
- the recommendations of the Finance Committee.

Chapter 6

Implications of the changing framework

Introduction

This Strategic Review of Charges 2006-10 builds on the solid foundation that was created by our 2002-06 Strategic Review. For this Review, however, we have been able to carry out more thorough analysis because there is better information now than was available to us at that time.

We have conducted this Strategic Review of Charges in line with the Better Regulation Task Force principles of transparency, accountability, proportionality, consistency and targeting.

In general, we believe that our overall approach at the last Review remains valid. However, our approach for this Review has changed in several important areas; these changes reflect both the lessons we have learned since the last Review and changes to the regulatory framework for the water industry in Scotland.

The Minister's commissioning letter for this Strategic Review outlined the changes to the regulatory framework that were taking place and stated that the Review should be consistent with those changes. We have therefore ensured a transparent audit trail.

This review focuses on Scottish Water's core activities of providing water and sewerage services to customers in Scotland. This reflects the requirements of the Water Industry (Scotland) Act 2002, which restricts our role to promoting the interests of customers of the core business

Changes to the competition framework contained in the Water Services etc. (Scotland) Act 2005 require a greater degree of accounting separation, so there is a clear split between retail costs (customer service and billing) and wholesale costs (network management and operation of treatment plants). As a result, we are also setting both the overall level of wholesale charge and the retail charge caps at this Review.

We have also taken steps to make sure that the way we have benchmarked Scottish Water's performance is easier to understand. This has involved three main changes:

- a move towards the regulatory capital value method of price setting;
- adoption of the cash-based of financial ratios that Ofwat uses in regulating the companies in England and Wales; and
- the introduction of regulatory accounts.

Transparent audit trail

As an important first step in facilitating debate, we published a detailed work plan³². This set out a timeline for the remainder of the Review process.

Publication of the work plan was followed by a series of documents which provided a detailed description of the proposed methodology for the review. These methodology documents explained the factors that we proposed to take into account in determining efficiency targets, investment levels and customer service standards for Scottish Water.

In completing this draft determination, we have used information from the regular information returns that Scottish Water submits to this Office, the business plans prepared by Scottish Water and Scottish Water's responses to our regulatory letters. All of this information (with the exception of Scottish Water's first draft business plan) is available on our website.

We also published an audited version of the financial model and a detailed manual in September 2004. A final version of the model was published in June 2005. We will publish a version of the model with the information underpinning this draft determination in July 2005. A licensed copy of Microsoft Excel® is required to run the model.

In addition, in December 2004 we published a report from an external expert (ING Barings) on financial ratios and borrowing in the water industry. In May 2005 we published our response to the methodology consultation, including a copy of the consultation responses we had received.

During the past year we have held a series of workshops and stakeholder information days so that interested

³² Water Industry Commissioner for Scotland, 'Our work in regulating the Scotlish water industry: Setting out a clear framework for the Strategic Review of Charges', July 2004.

parties could seek clarification and express their views. Details of these events were contained in our work plan, and we contacted a large number of stakeholders before each event to let them know they were taking place. A summary of these meetings is available on our website.

We discussed the changes in our approach to charge setting at this Review in our methodology consultation and at the stakeholder information days. These discussions have included in particular the three main changes in our approach, which are discussed below.

The regulatory capital value approach to price setting

Ofwat uses the regulatory capital value approach in setting prices for the companies in England and Wales. We believe that we now have sufficient information about Scottish Water's assets and their remaining lives to begin to move towards this method of charge setting. It is important to understand that for the purposes of this Strategic Review of Charges we are laying the ground for the future use of the RCV.

Our approach requires us to set an initial RCV for Scottish Water. Scottish Water will receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV. Depreciation (reflecting the costs of using existing assets) reduces the RCV but its cost will be covered in the annual charge limit.

These changes will be limited to the approach to meeting the costs of new and existing assets. Our move towards this new approach will have no material impact on the charges faced by customers, the resources available to Scottish Water, or the level of public expenditure. The changes are designed principally to allow greater transparency. They will bring the approach to charge setting for Scottish Water into line with that for the English and Welsh water and UK energy sectors and will allow us to make a direct comparison of Scottish Water's financial sustainability with that of the companies south of the border.

Beginning to move towards the RCV method of price setting allows us to make a direct comparison of Scottish Water's financial sustainability with that of the companies south of the border.

We consulted on our approach to establishing the initial RCV for Scottish Water as part of our methodology consultation. We explained that there are four broad approaches that regulators can use to establish the initial RCV of a regulated utility in the private sector:

- an accounting approach the RCV takes into account the asset value of the company;
- a market value approach the RCV adopts the value placed on the company by the financial markets;
- a comparator approach the RCV is set by making a comparison with the RCV of a similar company; and
- a discounted cash flow approach the RCV is calculated by using financial valuation techniques.

Most UK regulators have used the second approach to estimate the initial RCV of the regulated business. It is obviously not possible to apply this method for a public corporation such as Scottish Water.

In 2009-10 we wanted the RCV to be sufficient to ensure that if Scottish Water met its obligations under its regulatory contract, then it would comply with all of the targeted financial ratios. The initial RCV was backwards calculated on the allowed investment programme, our inflation expectations and our allowances for depreciation.

We checked this initial RCV with a range of comparisons including:

- relative asset bases (in terms of both value and structure);
- non-infrastructure capital investment;
- Welsh Water's debt to RCV ratio;
- the companies' funding costs to RCV ratio (ie debt and dividends); and
- assets relative to the type and number of customers served.

This analysis showed that the initial RCV was reasonable³³.

Financial ratios

Following its inquiry into the water industry in the first quarter of 2004, the Finance Committee of the Scottish Parliament concluded that the way we use financial ratios should have been more transparent.

The RCV method of price setting that we have begun to introduce will make the process of comparing financial performance more straightforward.

We have adopted the cash-based ratios that Ofwat used in its price determinations for 2005-10. We have set charges using the key ratios that Ofwat targeted in its review as constraints. In other words, we set revenue in the final year of the draft determination to ensure that Scottish Water's financial health met the standard required by Ofwat's key ratios. Where Ofwat has stated that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target.

We have also published the two debt payback period ratios and the cashflow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. We believe that it is desirable for Scottish Water to remain broadly compliant with these guidlines. We have not, however, amended charge limits in order to comply with the targets for these ratios. This reflects the capital market's view that these ratios are now outdated. We believe that it is useful to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

In their Ministerial Guidance, Ministers stressed the importance to customers of stable charges. Accordingly, we have proposed charge caps in the first three years of the regulatory control period that ensure a smooth transition to the level of prices required in 2009-10.

Our analysis also suggested that this approach reduced the risk of substantial real charge increases in the 2010-14 regulatory control period.

33 This is discussed in detail in Chapter 20 of Volume 5.

Introduction of regulatory accounts

Why we introduced regulatory accounts

The Strategic Review of Charges 2002-06 covered both the core and non-core activities of Scottish Water (and the three former water authorities). It was based on financial information provided by the three authorities, including information from their statutory accounts.

As the 2002-06 Review was based on information contained in the statutory accounts of the three water authorities, we knew that we would need to adjust the information reported to us by Scottish Water in order to ensure that our assessments of its progress year-on-year and against targets were properly objective. Such adjustments may be necessary because the level of operating cost can be influenced by management's interpretation of changes in accounting policy and practice. Although these adjustments may be perfectly in line with statutory accounting rules we need to unwind them in order to be able to make like-for-like comparisons over time.

Regulatory accounts keep to a minimum the need for, and extent of, such adjustments by determining in advance the basis on which numbers are reported.

In early 2003, Scottish Water submitted its proposed business plan for the three-year period from 2003-04 to 2005-06. In March 2003, the Minister wrote to this Office asking us to consider representations from Scottish Water about its strategic business plan. In particular, the Minister noted that Scottish Water's proposed business plan suggested that its operating cost targets would be different from those set out in the Strategic Review of Charges.

We received written representations from Scottish Water. In our response to Ministers we pointed out that the operating cost projections contained in the strategic business plan would have led to charge increases of around £40-£50 in 2006-07 for the average household customer.

The ten principles

We worked with Scottish Water to understand its representations and make an appropriate revision to its efficiency targets. During the spring and early summer of 2003 we developed the 'ten principles' with Scottish Water and the Scottish Executive. These principles set out a range of measures to improve information flows and clarify both Scottish Water's efficiency targets and the nature and scope of any adjustments that are made for the purposes of comparison.

This agreement also led to the introduction of regulatory accounts. This was an important step forward in ensuring that our monitoring is more robust.

Implications of the Water Industry (Scotland) Act 2002

In the last Strategic Review of Charges, we commented on the advantages to be gained from proper accounting separation between Scottish Water's core and non-core activities. We were pleased when the Water Industry (Scotland) Act 2002 limited the remit of this Office to promoting the interests of customers of the core business.

Core activities need to be separated and appropriately ring fenced, so that we can properly promote the interests of customers of the core business. The introduction of regulatory accounts has significantly improved clarity when defining the separate activities. Until they were introduced, only a limited and approximate measure of separation was possible, through unaudited reporting of non-core costs and revenues by Scottish Water in annual regulatory returns. This arrangement was problematic as:

- although core activities are defined by legislation in general terms, there were no agreed definitions of exactly what constitutes core activities;
- the Strategic Review of Charges 2002-06 dealt with all areas of business, both core and non-core, and was published before the 2002 Act; and

 we had to adjust reported numbers to accommodate ongoing changes in the scope of non-core activities since the Strategic Review of Charges 2002-06.

Regulatory accounts facilitate more effective benchmarking

The economic regulators establish and define the guidelines for regulatory accounts. Regulatory accounts do not necessarily follow the standard accounting guidelines (FRS, UKGAAP, etc) that are used for statutory financial accounts. Indeed, in their common principles³⁴ the regulators agreed that in the event of a conflict between regulatory accounting guidelines and UKGAAP, the regulatory accounting guidelines would take precedence.

Regulatory accounts are designed to provide a representative picture of performance in the context of the economics of the particular regulated sector. Each regulator therefore sets out specific guidance for their sector. The specialist nature of regulatory accounts allows much tighter definitions of reporting requirements to be specified. In contrast, UKGAAP must be sufficiently flexible to deal with a full range of types and size of business. The tighter definition allowed by regulatory accounts allows comparisons of performance both over time and between companies.

Regulatory accounts cover all aspects of the water and sewerage companies' finances in England and Wales. This comprehensive information allows Ofwat to compare financial performance fully and objectively, and to set appropriate targets for efficiency, capital investment and sustainable financial indicators. The introduction of regulatory accounts for Scottish Water has allowed us to propose appropriate targets.

The introduction of regulatory accounts should significantly reduce the need for adjustments to Scottish Water's reported costs in the 2006-10 regulatory control period.

^{&#}x27;The role of regulatory accounts in regulated industries, a final proposals paper by the Chief Executive of Ofgem, Director General of telecommunications, Director General of water services, Director General of electricity and gas supply (Northern Ireland), Rail Regulator, Civil Aviation Authority, and Postal Services Commission' – page 5.

Licensing framework

Changes to the competition framework that are contained in the Water Services etc. (Scotland) Act 2005 required a further level of accounting separation. This framework requires a clear split between the retail costs (customer service and billing) and the wholesale costs (network management and operation of treatment plants).

We have used the regulatory accounts to ensure that we can distinguish clearly between the retail and wholesale costs. This will ensure that customers benefit to the greatest extent possible from the proposed changes.

The regulatory accounting guidelines define the retail and wholesale activities in significant detail. There are also rules set out, as part of the regulatory accounting guidelines, that determine the allocation of central overhead costs between the wholesale and retail business and the general trading relationship between the two legal entities. We will ask the Reporter and Scottish Water's auditor to report on Scottish Water's compliance with these rules.

Conclusion

We have made a number of changes in our approach to the Strategic Review of Charges 2006-10. Wherever possible we have taken account of stakeholders' views on the Strategic Review of Charges 2002-06.

In particular, we have moved towards the RCV method of price setting for this draft determination. This allows more immediate comparison of financial performance between the privatised industry south of the border and Scottish Water. Such comparison is facilitated because we have adopted the Ofwat cash-based financial ratios as constraints on price. We have also ensured that monitoring over time is facilitated by continuing to measure Scottish Water's compliance with the debt pay-back ratios that underpinned our advice in 2001.

We have sought to adopt the Better Regulation Task Force principles in setting charges. In July 2004, we published a detailed work plan for the review and highlighted the opportunities for stakeholders to learn about or comment on our proposed approach. Detailed information relating to the Strategic Review of Charges 2006-10 (including our financial model and requests for information) has been placed on our website.

The Water Industry (Scotland) Act 2002 and the Water Services etc. (Scotland) Act 2005 have strengthened the regulatory framework and should ensure that customers in Scotland can look forward to stable charges and better value for money. These changes have required us to introduce regulatory accounts. These should improve the transparency of our comparisons of performance between Scottish Water and the companies south of the border.

Chapter 7Critical issues

Introduction

This chapter highlights some of the critical issues that have had an impact on the level of charge caps set in our draft determination. Customers have the right to expect that the service they receive is provided efficiently. In this regard, it is particularly important that investment in improving the environment, public health and the level of service to customers is delivered according to the agreed profile. We believe that customers should not pay twice for any promised improvement; this draft determination sets out a clear process that will protect customers from any shortfalls in performance from Scottish Water.

In the long run we believe that customers' interests are best served by a financially sustainable Scottish Water, operating within an effective and balanced governance and incentive framework. This will ensure that each generation of customers meets the costs of the level of service they have enjoyed.

We have proposed charge caps that ensure Scottish Water ought to comply with the targeted Ofwat financial ratios and that have taken account of the reasonable required overall level of operating costs and capital investment (such that Ministers' objectives can be delivered). The charging regime has been developed to smooth out year-on-year volatility.

In regulating Scottish Water, we are interested not only in the level of cost incurred but also in the level of service provided to customers.

The Strategic Review of Charges 2006-10 does not end with the publication by the new Water Industry Commission of the final determination at the end of November 2005, or even with the approval of the scheme of charges that takes effect from 1 April 2006. The Commission will monitor and report on Scottish Water's performance during the regulatory control period. This monitoring is important because it will identify whether the future charge profile for 2010-14 indicated in this draft determination is likely to be deliverable.

Efficiency

The principal statutory function of the Water Industry Commissioner for Scotland is to promote the interests of customers. This is achieved primarily by encouraging Scottish Water to deliver an appropriate level of service at the lowest sustainable cost.

The costs of providing the service can be broken down into operational costs (the costs of running the system), capital costs (maintaining, replacing and upgrading the assets) and financial costs (the costs associated with debts and funding working capital).

Funding the costs of maintaining the system ultimately has to come from customers. If money is borrowed, the cost of this borrowing has to be met by customers both in the present and in the future. If the Government provides a grant to the water services provider, the money for this grant also comes ultimately from the taxes customers pay. Either taxes would have to increase to meet this cost, or funding for other central government services would have to be reduced. The customer interest is therefore clearly served by Scottish Water delivering its service efficiently.

Efficiency is often taken to mean cutting the costs of providing a service. This is, however, too simplistic a view because an assessment of efficiency should also take account of the service that is actually being provided. Water and sewerage undertakers in the UK must provide the minimum standard of service that is expected by stakeholders. This includes treating drinking water to the minimum standard required by legislation and removing and disposing of effluent in compliance with the minimum standards required by legislation.

An efficient water and sewerage undertaker will carry out the minimum activity necessary to provide the service that is expected, at the lowest cost.

An inefficient water and sewerage undertaker may be inefficient for one of two reasons:

 Case A – the organisation carries out more activities than are necessary in order to provide the expected standard of service. Even if the organisation is

generally low cost, this would tend to increase the cost of providing the service. Even if these extra activities raise the standard of service above that which stakeholders expect, we would still consider this organisation to be inefficient.

 Case B – the organisation carries out the minimum activities that are necessary in order to provide the expected standard of service, but at a high cost.

In Case A, the organisation has chosen to provide a higher standard of service than is actually expected. Customers should not be expected to pay for the costs of providing this high standard of service, unless they have previously indicated a willingness to pay for it.

In Case B, the organisation provides the minimum expected service, but at a relatively high cost. Once again, customers should not be expected to pay more as a result of their undertaker's inefficiency.

An efficiency can therefore only be claimed when the costs incurred in delivering a defined level of service to customers are reduced or when there is an improvement in the level of service to customers with no additional costs incurred.

This definition applies equally to both operating costs and capital expenditure. In capital expenditure, we define efficiency as delivering the same level of investment outputs for less expenditure or delivering a higher level of outputs for the same expenditure.

At the Strategic Review of Charges 2002-06, our primary focus was on the former, ie delivering the same level of outputs that was originally proposed in the Quality and Standards II process, but for a lower level of expenditure.

In the Strategic Review of Charges 2006-10, we have again focused on ensuring the delivery of the Ministers' objectives for the lowest reasonable overall cost. We have set out to be clear about the actions that would not be consistent with our definition of capital expenditure efficiency. These actions include the following:

- Deferring a project: it is not acceptable simply to defer a project that is included in the Quality and Standards investment programme in order to claim an efficiency. Even if a new derogation has been negotiated, no further funding would be allocated in future charge caps to allow for a deferred scheme to be completed unless some new output has been substituted for the original project; and
- The 'do nothing' option: it is unacceptable simply not to complete a project unless the required output can be delivered in some other way.

The charges paid by customers are a direct function of the efficiency of the water industry in Scotland.

Delivery of investment

It is critical that assets are maintained in an appropriate way and that problems are not stored up for the future. If assets are not maintained appropriately, this increases the cost of environmental/public health compliance and improvements in customer service. This in turn is likely to reduce customers' willingness to pay for improvements. We have ensured that sufficient funding has been made available at least to maintain the serviceability of assets.

The condition of the assets should be monitored regularly, so that investment takes place at the point where the cost of ensuring that an asset can perform adequately exceeds the annualised costs of replacing or refurbishing the asset. In this way, customer charges over the medium to long term are kept to a minimum and service levels are maintained.

In their February statement, Ministers set out their priorities for the water industry in Scotland during the next regulatory control period.

There have been significant increases in customers' bills in the past few years. In general, customers have accepted that there is a need to invest in our water supply and water environment. However, if promised outputs are delayed this could have an impact on customers because there is a higher risk that an output will not be delivered in full or that it will cost more to

deliver. Customers are likely to question why promises of improved service levels have not been delivered yet bills have gone up.

At the start of Quality and Standards III we made it clear that we would require a transparent investment programme that is open to audit. A detailed baseline programme brings significant benefits for customers. Capital projects such as treatment plant upgrades or pipe renewal can have a major impact on customers and their local communities, and customers have a right to information about projects that will impact on them.

We have therefore published the baseline investment programme that has been funded in this draft determination. If customers have been told by Scottish Water that levels of service will improve as the result of a particular project, they should be able to check if and when that project has been delivered. This will help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

Similarly, if customers are to receive value for money it is vital that the large quality investment programme is properly defined. In our view, this baseline investment programme will need further definition in a number of areas if we are to be able to monitor it properly

Improvements in customer service

We explained earlier that it can be difficult to measure customer service performance. Important factors such as the number of properties at risk of sewer flooding or experiencing water pressure problems require engineering judgements. It can take several years, using a consistent approach to monitoring, before we can measure performance on individual parameters accurately and with confidence.

Scottish Water provides this Office with customer service information on a quarterly and an annual basis. The lack of reliable information from Scottish Water currently restricts our ability to understand Scottish Water's actual customer service performance at a detailed level. We can be confident, however, that there

is a considerable gap in performance between Scottish Water and the industry south of the border. The gap in performance cannot reasonably be accounted for by the scope for error in measuring levels of service either side of the border.

Our monitoring will ensure that the levels of service included in this draft determination are delivered. If there is a shortfall in delivering customer outputs that have been funded in this draft determination, we will adjust the determination accordingly at the next Strategic Review of Charges.

Effective governance and incentives

We wrote a second open letter to Ministers in May 2005. This letter addressed issues arising from the use of incentive-based regulation to set charge caps for Scottish Water. This letter suggested that the performance of management should be judged by the extent to which they out-perform the regulatory contract. This letter is published on our website.

Establishing financial sustainability

In the Strategic Review of Charges 2002-06, we showed that in previous years the Scottish water industry had spent considerably more than it had received in customer charges. We explained that this was a problem because it was likely that high levels of investment were likely to be required for the foreseeable future. It would only have made matters worse to continue to increase net borrowing significantly in order to eliminate the gap between revenue and expenditure. Borrowing may have delayed a charge increase, but it would have increased future bills by the interest payable on any additional borrowing.

In providing our advice on the level of revenue, we took into account a clear concern from customers that the industry needed to 'get its house in order'. Customers also suggested that as a commodity business, Scottish Water should be able to operate sustainably without real increases in charges.

We believe that the revenue increases that we implemented in the Strategic Review 2002-06 have ensured that we now have a more sustainable industry. Customers will begin to enjoy the benefits of this in the 2006-10 regulatory control period.

If customers are to continue to benefit from a sustainable industry, we must ensure that we invest appropriately in water services. This means that a generation should pay the full costs of the service that it receives and should not store up problems for future generations. The introduction of a charge setting mechanism that is tied to changes in, and the funding costs of, the regulatory capital value will make this more transparent.

Financial sustainability is critical to the success of the public sector model. In the public sector model, the Government wants best value for money for customers and to ensure that social, environmental and public health policy priorities are delivered.

Rigorous monitoring

Where prices are regulated the company may have an incentive to meet cost reduction targets by reducing quality.

As previously outlined, improved efficiency implies either a higher quality output for the same charge or the same quality output for a lower charge. Regulators therefore monitor and report on the levels of service provided to ensure that the cost savings being made by the company are sustainable and will benefit customers. It is not in the customer interest that budgetary pressures result in corners being cut either in customer service or in the way the asset base is maintained.

It is important that we are able to measure levels of service to customers in an objective and consistent way, both now and in the future. This requires us to set out in detail the areas of service that we will measure and how they will be measured. We describe the targets that we will be monitoring in this draft determination. We have endeavoured to ensure that we measure the factors that are important to customers and that customers can understand our analysis of Scottish Water's performance.

Our work in scrutinising costs and the levels of service delivered is key to our role in ensuring that customers receive value for money on a sustainable basis. We believe that this detailed monitoring ensures that we have fulfilled our statutory duty to have regard to "the economy, efficiency and effectiveness" with which Scottish Water is using its resources.

Customers only pay once for an agreed output

Regulation has introduced much needed transparency to the assessment of the performance of the Scottish water industry. In the past it was not clear whether customers had received the benefits which were promised and for which they had paid. For example, in the last Strategic Review of Charges, we raised concerns about the level of scrutiny and challenge given by the former authorities to projects as they passed through the project appraisal process.

We have developed our performance monitoring significantly in the last three years. Our more detailed monitoring of the capital programme will also ensure that we can manage the transition from the Quality and Standards II to the Quality and Standards III period effectively.

This monitoring is likely to be critical since we expect that more than £250 million of Quality and Standards II investment may not have been delivered before the start of the Quality and Standards III period.

We have subtracted these outputs from the initial RCV. We will then add this back to the RCV as the investment is delivered. Quality and Standards II additions will be depreciated once they are added.

Moreover, we have made it clear both in this draft determination and in an open letter to the Minister³⁵ that if Scottish Water underperforms the targets set in the Strategic Review of Charges 2006-10, we would expect Ministers to decide on an appropriate course of action. In our view, customers should not be asked to pay twice for the same benefit.

³⁵ Open letter to Minister dated 2 December 2004; is available on our website www.watercommissioner.co.uk

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June 2005

The Strategic Review of Charges 2006-10: The draft determination

Our approach to setting charge caps



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Executive summary

Introduction

Over the period July to December 2004 we published five consultation documents which set out our proposed methodology for the Strategic Review of Charges 2006-10. These volumes covered the following key areas:

- our work plan;
- the regulatory framework in Scotland and the lessons learned from the Strategic Review of Charges 2002-06;
- the calculation of prices;
- the scope for efficiency operating cost; and
- the scope for efficiency capital expenditure.

Regulatory information

Information is vital to effective regulation. We require Scottish Water to submit a number of regular regulatory returns, covering all aspects of customer service, costs, capital expenditure and customer billing.

We have recently appointed a Reporter for the water industry in Scotland. This appointment brings the regulatory framework in Scotland more into line with the practice of the Office of Water Services (Ofwat) in England and Wales.

Ensuring transparency and accountability

In preparing the Strategic Review of Charges we undertook a number of initiatives designed to improve the transparency and accountability of regulation. We introduced 'stakeholder information days', which were held approximately every six weeks. These provided a forum for us to outline our progress and for stakeholders to have their say. We have made our analytical tools available to stakeholders.

This draft determination is the culmination of more than a year's work. The main milestones leading up to this draft determination were as follows:

- Minister's commissioning letter for the 2006-10 Strategic Review of Charges;
- Scottish Water submits its Annual Return for 2003-04;
- Quality and Standards III consultation;
- Principles of Charges consultation;
- Scottish Water's first draft business plan;
- · Ministerial Guidance; and
- · Scottish Water's second draft business plan.

The next steps will be as follows:

- WICS' draft determination of charges;
- Scottish Water submits its Annual Return for 2004-05;
- opportunity for representations by stakeholders; and
- new Water Industry Commission makes final determination of charges 2006-10.

External advice

Where appropriate we have taken specialist advice from a number of companies with appropriate financial, economic and engineering expertise.

In addition, we have benefited from the advice of three senior advisors: John Banyard OBE, Sir Ian Byatt and Professor David Simpson. We believe that in preparing this Strategic Review of Charges much has been gained from the fresh perspective that these respected experts provide. We also sought detailed comments on this draft determination from Thomas Sharpe QC and his legal team. These comments have been incorporated into each of the volumes.

Framework for the Strategic Review of Charges 2006-10

The Water Industry Commissioner for Scotland (WICS) has the general function of promoting the interests of

customers. We promote the interests of customers primarily by encouraging Scottish Water to become more efficient. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers.

In the Strategic Review of Charges 2006-10 we have sought to minimise the exposure of Scottish Water's customers to operational and financial risks. We commissioned a report from ING Barings on the privatised English and Welsh companies' access to debt. We were keen to ensure that there are similar effective controls on access to borrowing. If there are no such controls, the incentives to achieve efficiency targets on time are significantly reduced.

Establishing effective controls on access to debt is an important part of establishing a tight budgetary constraint on the regulated body. A properly tight budgetary constraint will focus management attention on delivering ongoing improvements in value for money to customers.

Some stakeholders have suggested that the industry should borrow more and reduce charges to customers. This is not consistent with a goal of maintaining stable charges in the medium to long term. Such an approach would also reduce the industry's flexibility to withstand an operational shock.

From a customer perspective, it is important that the industry is managed on a sustainable basis. The owner must ensure that management face a tight budgetary constraint and must monitor performance clearly. The owner will also need to take difficult decisions in the event that performance (within the control of management) lags behind what is expected.

The calculation of prices

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scottish Water's 2004 regulatory return, it would cost some £27 billion to replace all of the water industry's assets in Scotland. This is more than £5,000 for every person in Scotland.

The effectiveness and value of assets decline over time and customers should bear these costs as they receive the benefit from use of the assets. The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc).

From a regulatory point of view, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge for each type of asset to be recovered from customers' charges.

Non-infrastructure assets are grouped into five categories: very short (assets having a life of up to five years), short (assets having a life of six to 15 years), medium (assets having a life of 16 to 30 years), medium/long (assets having a life of 31 to 50 years) and long (assets having a life exceeding 50 years).

The role of a regulator is to set charges that are sufficiently high – but no higher – to ensure the sustainable delivery of the desired level of service. We have therefore scrutinised costs carefully.

We have moved towards the regulatory capital value (RCV) method of setting prices in this draft determination. This will facilitate comparisons between Scottish Water and the industry south of the border. Scottish Water receives a rate of return on its RCV. Efficient investment in new assets is added to the RCV. Depreciation (reflecting the costs of using existing assets) reduces the RCV.

The rate of return is the cost associated with managing and financing the above-ground asset base. The cash cost of replacement is covered by the depreciation charge.

The product of the RCV and the allowed rate of return gives the total return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

The revenue that we allowed Scottish Water was calculated as follows:

Figure 1: How we calculated Scottish Water's revenue

Return allowed on the regulatory capital value +
allowable operating costs +
depreciation on non-infrastructure assets +
the infrastructure renewals charge (IRC) +
the costs of Public Private Partnership (PPP) contracts.

We have set revenue such that Scottish Water will comply with all the cash-based financial ratios (used by Ofwat in its 2004 final price determinations) if it meets the terms of its regulatory contract in full.

The allowed level of revenue includes an appropriate allowance for operating costs. Our assessment of operating costs takes into account inflation, the scope for efficiency and an allowance for efficient new operating costs. It is important to highlight that our assessment of efficiency includes a detailed comparison of both the relative level of cost incurred **and** the relative level of service delivered.

Monitoring the RCV and the ratio of total debt to the RCV should provide stakeholders with a useful indicator over the long term of the financial performance of the water industry in Scotland.

Charge caps and tariff baskets

In this Strategic Review and in line with the new regulatory framework, we have determined a series of charge caps rather than a general cap on revenue. A charge cap largely insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory control period.

We established tariff baskets to cover the core services provided by Scottish Water. The use of tariff baskets also helps to ensure that the principles of charging determined by Scottish Ministers are applied in a transparent way.

A definition of tariff baskets

A tariff basket includes all of the tariffs that impact on customers who receive a particular service. For example, if measured non-household water customers were considered as a group, all of the tariffs that impact on them would be included. Such a tariff basket would therefore include the standing charges relating to the different sizes of connection available and the volumetric tariffs. The balance of tariffs within the basket will be determined by the number and type of connections, the amount consumed and any increases or decreases in the tariffs included in the basket.

Total revenue is determined by adding together the output of each tariff basket. The revenue from an individual tariff basket is assessed by calculating the sum product of the relevant customer base and relevant tariffs.

Table 1: The use of weighted average tariffs

	% increase (D)	% of total revenue (E)	Weighted % increase (D x E)
Tariff A	5%	50%	2.5% (A)
Tariff B	-5%	20%	-1% (B)
Tariff C	20%	30%	6% (C)
Weighted average (A+B+C)	-	-	7.5%

The weighted average increase provides a reasonable indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change. We will scrutinise carefully any material divergence in tariff changes within a basket. For the purposes of calculating the effect of this draft determination on our standard customers, we have assumed that each tariff in each basket has been increased by the same amount.

Our approach to tariff baskets

In England and Wales tariff baskets are defined in condition B of the companies' operating licences. There are no such defined tariff baskets in Scottish Water's case.

We have defined ten tariff baskets:

household unmeasured water;

- household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water (20mm connection);
- measured water (25mm connection and above);
- measured waste water (20mm connection);
- measured waste water (25mm connection and above);
- surface water drainage (excluding unmeasured household); and
- trade effluent.

The tariff baskets are described in further detail in Volume 7 of this Strategic Review of Charges 2006-10.

Treatment of large customers

Large customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. Ofwat considers that pricing arrangements for large customers could significantly distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate. Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. We have therefore included large customers in the tariff basket.¹

Standard customers

In the Strategic Review of Charges 2002-06, we illustrated the effect of our recommendations with reference to a number of standard customers. We have

developed our use of standard customers so that customers can better understand the likely impact of the review on the bill that they pay.

Scottish Water has more than 120,000 non-household customers. These customers will each require a different mix of services from the water and sewerage undertaker, and in due course the new retail undertaking to be established by Scottish Water, so the impact of tariff changes will impact on their total bills in different ways.

It is clearly important that our set of standard customers is representative of the actual customer base. This ensures that all customers can find a 'match' that will illustrate the likely impact of tariff changes on their bill.

Tables 2 and 3 show the standard customer descriptions that we use in this draft determination.

Table 2: Standard measured customers used in draft determination

Strategic Review of Charges 2006-10	Water			Sewerage	
	Meters (no x size (mm))	Volume (m³)	Meters (no x size (mm))	Volume (m³)	Rateable value
Convenience store	1 x 20	30	1 x 20	28.5	£5,000
Garage	1 x 20	100	1 x 20	95	£10,000
Large restaurant	1 x 20	500	1 x 20	475	£100,000
Large office	1 x 25	900	1 x 25	855	£750,000
Retail group	2 x 20 20 x 25 1 x 35	4,500	2 x 20 20 x 25 1 x 35	4,275	£1,700,000
Food manufacturer 1	2 x 25 1 x 80	50,000	2 x 25 1 x 80	47,500	£100,000
Food manufacturer 2	2 x 25 1 x 50 1 x 100	100,000	2 x 25 1 x 50 1 x 100	95,000	£260,000
Large manufacturer	1 x 150	175,000	1 x 150	166,250	£1,225,000
Brewers	2 x 25 1 x 100 1 x 150	600,000	2 x 25 1 x 100 1 x 150	150,000	£500,000
Warehouse	1 x 20	10	1 x 20	9	£500
Large house	1 x 20	110	1 x 20	104	Band H
High School	1 x 25	2,000	1 x 25	1,900	£18,000
Hotel	1 x 50	15,000	1 x 50	14,250	£75,000

It should be borne in mind that, under new section 29 of the 2002 Act (inserted by the 2005 Act), Scottish Water will not be entitled to depart from the prices set out in its charges scheme unless it obtains the consent of the Water Industry Commission under new section 29E (as so inserted). That consent may be granted only in relation to charges to be paid for services provided to a licensed water or sewerage services provider and then only if the Commission is satisfied that a customer of the provider has done, or has agreed to, something which reduces or increases the costs incurred by Scottish Water in providing the services to the provider and the departure is otherwise justified in the circumstances of the case.

Table 3: Standard unmeasured non-household customers used in draft determination

Customer name	Rateable value
Small newsagent/grocer	£200
Local hairdresser	£920
Sports club	£2,250
Supermarket	£30,000

Financial modelling

We built a financial model to allow us to calculate the revenue that Scottish Water requires to carry out its core functions.

The financial model requires robust and detailed information. We provided Scottish Water with the input tables for the financial model as a part of the business plan guidance that we issued in June and December 2004.

The model also contains financial assumptions, including information on interest rates and inflation expectations. In the Strategic Review we have used three indexes to measure inflation, namely:

- the Retail Price Index (RPI) for setting charge caps and the calculation of the nominal cost of capital;
- the Consumer Price Index (CPI) for all other nonasset costs; and
- the Construction Output Price Index (COPI), to assess the impact of increases in prices on investments.

Table 4 outlines the other assumptions that we made in the financial model.

Table 4: Other assumptions in the financial model

Title	Assumption	Value
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure excluding PPP	1.5%
Prepayments and accrued income	Percentage of revenue	5.5%
Other debtors	Percentage of revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25%
Accruals and deferred income	Percentage of operating expenditure including PPP	28%
Other creditors	Percentage of operating expenditure including PPP	8%

One of the key considerations of our modelling was the financial sustainability of Scottish Water. The model automatically calculated key financial ratios. Our move towards the RCV method of charge setting has allowed us to make direct comparisons of Scottish Water's financial sustainability with that of the companies south of the border. We have compared Scottish Water's financial ratios with those used by Ofwat in its last two price reviews.

Charges have been set to ensure that Scottish Water is placed on a sound financial footing. This should minimise the financial risks to customers.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, 'Final determination: Future water and sewerage charges 2000-05'. These ratios are shown in Table 5.

Table 5: Ofwat's target ratios for 2000-05

	Water and sewerage companies	Large water only companies	Small water only companies
Historic cost interest cover	Min 2x	Min 2.25x	Min 2.5x
Average gearing (D/D+E)	45-55%	45-55%	45-55%
Cash interest cover (EBITDA Basis)2	Min 3x	Min 3.4x	Min 3.75x
Cash interest cover (EBIDA Basis)3	Min 2x	Min 2.25x	Min 2.5x
Debt payback period (EBITDA Basis)	Max 5 years	Max 5 years	Max 5 years
Debt payback period (EBDA ⁴ Basis)	Max 7 years	Max 7 years	Max 7 years
Cashflow to capital expenditure ratio (EBDA Basis)	Min 40%	Min 40%	Min 40%

² EBITDA – Earnings before interest, tax, depreciation and amortisation.

³ EBIDA – Earnings before interest, depreciation and amortisation.

⁴ EBDA – Earnings before depreciation and amortisation.

In 'Future water and sewerage charges 2005-10: Final determinations', Ofwat outlined the financial indicators that it had used to set prices for the next regulatory period. Table 6 shows these ratios.

These financial ratios were adopted by Ofwat after detailed consultation with both the Credit Rating Agencies and the financial markets. The target value of the ratios was set at a level that was consistent with a company maintaining 'investment grade' for its debt.

Table 6: Ofwat's target ratios for 2005-10

	Target
Cash interest cover (funds from operations/gross interest)	Around 3 times
Adjusted cash interest cover (funds from operations less capital charges/gross interest)	Around 1.6 times
Adjusted cash interest cover (funds from operations less capital maintenance expenditure/gross interest)	Around 2 times
Funds from operations/debt	Greater than 13%
Retained cash flow/debt	Greater than 7%
Gearing (net debt/regulatory capital value)	Below 65%

How we have used these ratios in the Strategic Review of Charges 2006-10

Where Ofwat has stated that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target. We have adjusted charge limits to ensure that Scottish Water remains compliant in 2009-10 with all of the cash-based ratios.

We are also publishing the two debt payback period ratios and the cash flow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory control period. In order to measure the financial strength of Scottish Water on a consistent basis, we believe that it is desirable that Scottish Water should broadly comply with these guidelines. However, we have not changed charge limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are now outdated. We believe that it is useful to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

Setting the initial RCV

Most UK regulators have used a market value approach to set the initial RCV of their regulated businesses. It is obviously not possible to apply this method for a public corporation such as Scottish Water.

We have set an initial RCV that is consistent with the revenue that Scottish Water needs to finance its functions on a sustainable basis. This value for the RCV is broadly in the middle of the range of potential answers that were calculated using the comparator approach. The comparator method is consistent with the approach used by Ofwat to assign initial RCVs to the water only companies.

Setting the allowed rate of return for Scottish Water

In the private sector, a regulator sets an allowed rate of return. This is often referred to as the cost of capital. The regulator will set this rate of return to reflect current and expected market conditions. The regulator has a duty to set an appropriate rate of return (a weighted average cost of capital) such that an efficient company can properly finance its functions. A company may choose a mix of debt and equity funding, but its cash return on its regulatory capital is capped (unless it outperforms efficiency targets).

In the public sector the regulator cannot set the rate of return based on his observation of the cost of capital in the market. Scottish Water's cost of debt is set by Government. The debt supply curve is perfectly inelastic up to the public expenditure limit set by Ministers.

It is therefore not possible to estimate a market-based weighted average cost of capital (WACC) for Scottish Water. As a public sector organisation it has no contributed equity capital, although it does generate and reinvest trading surpluses. Scottish Water does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

We decided to apply a modified version of the private sector WACC approach. We combined the observed real cost of public sector debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

We set the pre-tax allowed rate of return on the customer retained earnings at the post-tax allowed rate of return for debt. In real terms this rate is low. An advantage of this approach is that there is no incentive for Scottish Water to seek to change its current ratio of debt to regulatory capital value. If the return on the customer retained earnings had been greater than the return on debt, Scottish Water would have had an incentive to pay down debt. In contrast, if the return on the customer retained earnings had been lower than the return on debt, Scottish Water would have had an incentive to take on more debt.

Depreciation and additions to the RCV

The value of the RCV changes over time to reflect efficient new investment and depreciation of existing assets. Since the RCV will be central to future determinations of Scottish Water's revenue requirement, it was important that the initial RCV that we established was adjusted appropriately to reflect asset use and additions.

Treatment of additions to the asset base

The key role of the RCV in charge setting is to reflect the value of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets this is reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

If Scottish Water has made additions to the RCV that have increased its value (net of depreciation), then the return component of the revenue requirement will be higher and charges will also be higher. As long as capital expenditure has been justifiably incurred in order to provide service to customers, then it is reasonable that customers should remunerate this investment in the RCV.

It is very important, however, that customers are only required to remunerate justifiable expenditure. We have therefore added only appropriate and efficiently procured capital investment to the RCV.

Treatment of depreciation

The role of depreciation is a little more complicated. It affects charges in two ways.

- It was deducted from the RCV and hence represents the amount by which the value of the assets has fallen. Again, assuming a constant rate of return, any reduction of the RCV reduces the amount of return allowed in Scottish Water's revenue requirement.
- The expected depreciation charge was added to the cash return and operating costs to determine the revenue requirement.

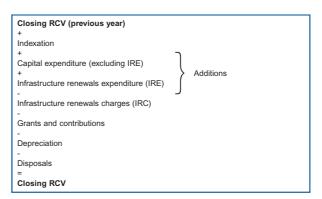
Depreciation therefore influences Scottish Water's revenue requirement both directly and indirectly (by affecting the level of return).

Rolling forward the RCV

The process of adjusting the RCV from its starting value to reflect changes in the asset base is known as 'rolling forward'. In the Strategic Review of Charges 2006-10 we have set the level of efficient new investment and the appropriate depreciation charge. We would adjust the RCV before the next regulatory control period to reflect any extra or inefficient investment.

Figure 2 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 2: Rolling forward the RCV



In order to ensure that the RCV does not decrease in real terms as a result of general charges rises in the industry itself, we adjust the RCV each year to take account of expected inflation.

Method for setting retail and wholesale charges

The changes to the competition framework contained in the Water Services etc. (Scotland) Act 2005 allow new entrants to obtain a licence to provide retail services to non-household customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine the appropriate overall level of wholesale charges we first needed to define the wholesale and retail activities. This separation of activities was set out in the regulatory accounting guidelines.

We decided to use an accounting approach to setting overall wholesale charges. We also considered alternatives such as the efficient component pricing rule and long run marginal cost, but concluded that they were less robust and increased the risk that our determination of overall wholesale charges could unduly favour either the wholesaler or the new entrant.

The accounting approach

We have therefore used our regulatory accounts to define the accounting costs of the wholesale and retail businesses. These accounting costs include all:

- direct and indirect operating costs (indirect costs include items such as shared legal, IT, and head office functions);
- direct and indirect capital expenditure; and
- financing costs.

Connection charging regime

Throughout the utility industry, issues have arisen in relation to the allocation of costs for new connections between existing and prospective customers. In Scotland, the mechanism for establishing how costs

should be shared equitably between existing and prospective customers is currently being redefined by the Scottish Executive through changes set out in the Water Environment and Water Services (Scotland) 2003 Act.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the Water Environment and Water Services (Scotland) Act 2003 by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. In this draft determination we have assumed that these regulations will bring the situation in Scotland broadly in line with that which applies south of the border.

Setting the allowed level of operating costs

Operating expenditure comprises day-to-day running costs such as employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as an operating cost.

We do not include the following in operating costs:

- pro-active maintenance of the asset base;
- depreciation;
- · infrastructure renewals charge; and
- costs of PPP schemes.

Operating expenditure accounts for some 30% of revenue. We collected information about the operating costs incurred by the water and sewerage service undertakers in the UK using a consistent breakdown of operating expenditure.

We exclude one-off items of expenditure that can affect reported operating expenditure. Examples would include:

- the costs of abnormal pension contributions;
- redundancy payments;

- rates rebates; and
- unusual weather conditions.

The baseline level of operating expenditure is the expenditure incurred in the base year. We apply future efficiency targets to this baseline. We have used the following process to set the baseline level of operating costs for the draft determination:

- We used the 2003-04 statutory accounts and June Return information to establish the total level of Scottish Water's operating expenditure in that year.
- We identified exceptional and atypical costs and subtracted them from total operating expenditure.
 This allowed us to establish the normal ongoing costs of running the business.
- Finally, we assessed whether there was anything unusual about Scottish Water's cost allocation in 2003-04. We compared Scottish Water with the companies in England and Wales to ensure that its cost allocation practices were consistent with those in England and Wales. Where necessary, we made appropriate adjustments to Scottish Water's operating expenditure.

The new Water Industry Commission will publish the final determination in November 2005. It will have information for 2004-05 at that stage, and is likely to revise its assessment of the baseline using that information.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in water quality, environmental compliance or levels of service to customers. Such new operating costs are added to the baseline that we described above.

We used the same criteria to assess the level of new operating costs as we used in the Strategic Review of Charges 2002-06. These are as follows:

 Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?

- Is Scottish Water required to provide this additional level of service, and for what reason?
- Has Scottish Water carried out a proper assessment of the proposed new operating expenditure, rather than relying on estimates from contractors/ manufacturers or on an arbitrary percentage of the capital cost?
- Has Scottish Water demonstrated management challenge and control over the proposed costs?
- Has Scottish Water compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?
- Do the alternative options include different mixes of operating expenditure and capital investment?
- Has Scottish Water quantified the potential savings to baseline operating expenditure which arise from upgrading works or systems, and offset increases in new operating expenditure accordingly?

Like-for-like comparisons

In order to make reliable like-for-like comparisons we need to understand the factors that can influence the level of costs incurred by the water and sewerage companies in the UK. These can typically be divided into those that are broadly controllable by management and those that are outside the control of management. We term these factors 'internal' and 'external' respectively.

It is possible to identify a number of external factors that affect the costs of the water and sewerage industry. They include the following:

- difficulty of operating environment (eg population density, topography, types of water source, etc);
- customer mix;
- customer requirements (resolving complaints, etc);

- environmental requirements (eg leakage levels, sewage effluent standards, etc);
- volumes (water consumption, peak use, sewage loads);
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

We can also identify a number of factors that are within the control of management. They include the following:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding purchasing and stocks of materials and consumables:
- the organisation's policy regarding hired and contracted services, for example the use of lawyers and consultants; and
- in the long term, the nature of the assets operated and maintained (size, mix, performance) – over time, water and sewerage service providers can change the assets they own and operate, either by building new ones, decommissioning old ones or making changes to existing assets to modify the way in which they operate.

Calculating relative efficiency

In order to make objective comparisons we need to take proper account of the external factors that influence the level of costs of each company. We use two separate benchmarking models to allow us to assess the relative efficiency of the water and sewerage companies.

The models allow us to compare the actual costs incurred by a water and sewerage company with a predicted level of costs from our benchmarking models. The difference between the predicted and the actual level of costs is an indicator of the relative efficiency of the company. We adjust these results so that the average level of predicted costs is 100. The results for other companies have been adjusted in a similar way. Companies with results that are lower than 100 are relatively efficient, while those with scores higher than 100 are relatively inefficient.

Ofwat's methods of benchmarking

Ofwat uses econometric models to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics. There are nine models for operating expenditure:

- water resources and treatment;
- water distribution;
- water power;
- · water business activities;
- sewer network;
- large sewage treatment works;
- small sewage treatment works;
- sludge treatment and disposal; and
- sewerage business activities.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. The models themselves take different forms. These are summarised in Table 7.

Table 7: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter >300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

We adapted the Ofwat models to reflect the number of small sewage treatment works in Scotland.

We developed two new unit costs for Scotland, both of which were high relative to those in the other size bands. This reflects the fact that it tends to cost more to treat loads at very small works. We also reworked the Ofwat econometric models using information from Scottish Water.

The WICS alternative model

We developed an alternative model to assess the efficiency of the water industry in Scotland. In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models so that the alternative model would provide an independent check on the results given by Ofwat's models.

The alternative model splits the water and sewerage business into ten different activities:

- water abstraction and treatment;
- water distribution;
- business activities (water);
- bad debt (water);
- ⁵ Thames Water covers much of the south east of England, including London.
- South West Water covers Devon and Cornwall.
- These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998.

- sewage collection;
- simple sewage treatment;
- complex sewage treatment;
- processing sludge;
- business activities (sewerage); and
- bad debt (sewerage).

For each of these activities, we determine the principal factors that would affect comparisons of operating costs between Scottish Water and the water and sewerage companies in England and Wales.

We used information from Scottish Water and the water and sewerage companies about each of these cost drivers. The model also takes account of economies of scale.

The purpose of making adjustments to reported costs

It was important for us to consider the results of the Ofwat, modified Ofwat, and the alternative modelling approaches very carefully. Our models cannot take account of all of the external factors that influence cost. These factors may either increase or decrease the level of cost.

We believe that the fact that the Ofwat models have been successfully applied to companies as different as Thames Water⁵ and South West Water⁶, and to both large water and sewerage companies and small water only companies, confirms that the models can reasonably be applied in Scotland.

We asked Scottish Water to draw to our attention any factors (those not included in the models) that would either increase or decrease cost. We believe that we have made appropriate adjustments to the results of the models. To justify an adjustment, Scottish Water has had to provide evidence in the following areas⁷:

- What is the justification for the special circumstances which demonstrates a material difference from industry norms? Scottish Water was required to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs, over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against upward cost pressures?

Assessing the future efficiency gap

The efficiency of the comparator companies in England and Wales continues to improve. We have taken account of the way in which the performance of the companies south of the border is likely to change over the next regulatory control period. Otherwise customers in Scotland may have to pay more than is necessary.

Ofwat published the results of its final determinations of price limits for the companies in December 2004. This has informed our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We have set an allowed level of operating costs that takes account of the improvements that Ofwat has required the companies south of the border to achieve.

Calculating total allowable operating expenditure

We have set targets in terms of total allowable operating expenditure (not including depreciation). We have set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory control period. This is the amount that will be funded through customer charges. Figure 3 sets out the calculation of total allowable operating expenditure.

Figure 3: Calculation of total allowable operating expenditure

Total allowable operating expenditure

=
Baseline operating expenditure

±
Assessed changes in baseline operating expenditure

Efficiencies in baseline operating expenditure

+
New operating expenditure

Efficiencies in new operating expenditure

+
PPP operating expenditure

+
New PPP operating expenditure

+
The impact of annual inflation on all of these components

Public Private Partnerships

The three former authorities decided to let a total of nine concessions for building and operating waste water treatment plants. These concessions were for a period of 25-30 years.

The concessions were let to joint venture companies which usually consisted of a consultant engineering and design firm, a construction contractor and an operations company. The companies had to accept responsibility for maintenance over the contract period and for the inherent risks of project delays, cost over-runs and volume changes caused by shifts in demand. They were also required to deliver the service within tightly specified parameters. An essential element of PPP is the transfer of risk from the public to the private sector.

We have no doubt that the contracts for the nine projects represented good value for money at the time they were concluded. However, we consider that improvements in Scottish Water's performance have made it less certain that the PPP contracts represent value for money to customers today. We therefore considered setting an efficiency target for PPP. Respondents to our methodology consultation did not consider that this was appropriate. However, one respondent did suggest that we should monitor costs carefully to ensure that the contractors were delivering the required level of service. Increases in PPP costs have had to be justified in detail.

Another respondent remined us that PPP may represent the most practical or best value method of delivering the required outputs. We have taken this view into account in this draft determination.

Levels of service

We have developed our use of the benchmarking approach for quality of service regulation.

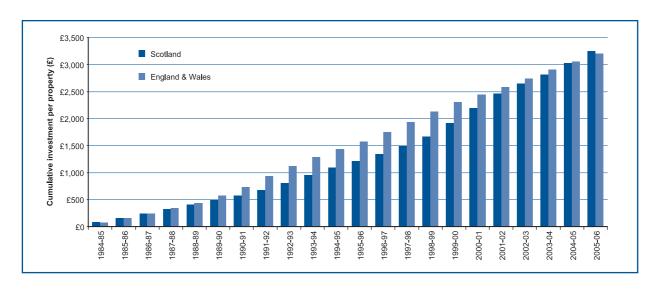
Our analysis of the score for efficiency has not been adjusted to take account of differences in the level of service. We have set clear milestones for the customer service performance of Scottish Water. If Scottish Water does not meet these standards we would be minded to adjust the allowed level of operating costs at the next charge determination downwards to reflect the lower level of service provided.

Historic investment in Scotland

It is important to put the current and past levels of investment in Scotland's water industry into a proper context. If we compare the level of investment in Scotland with that in England and Wales using the measure of investment per property, we see that investment will have matched that in England and Wales over the period 1985-2006, as Figure 4 shows.

The conclusion from this analysis, therefore, is that if there is a significant backlog of investment in Scotland relative to that in England and Wales, it can only be a result of historical and current inefficiency, not a lack of investment funds. We are not persuaded by Scottish Water's argument that the percentage of the total asset base that has been replaced in England and Wales over the same period is much greater than in Scotland. To be useful, such a comparison would rely on both a robust asset inventory and asset valuation. Scottish Water has accepted that more work is required in this area. Customers in Scotland have paid for, and so deserve, an equivalent standard of service to that which customers in England and Wales receive.

Figure 4: Cumulative investment per property in Scotland and in England and Wales 1984-20068



⁸ Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

Potential overhang from Quality and Standards II

In its second draft business plan, Scottish Water states that it expects to invest a total of £1,941 million by the end of March 2006. The plan also states that some £283 million will have to be invested after March 2006 in order to deliver the Quality and Standards II objectives.

We have accepted Scottish Water's estimate of the overhang from Quality and Standards II, although we have removed the claim for extra capital inflation beyond the current regulatory control period. Our analysis has shown that Scottish Water will deliver £274 million of the Quality and Standards II investment programme after March 2006. Accordingly, we have adjusted the initial RCV down to reflect the remaining outputs.

We will continue to monitor all of the projects in the WIC18 baseline⁹ until we are satisfied that Quality and Standards II has been delivered. The Reporter will have an important role in confirming that the full investment programme has been delivered.

Lessons learnt from establishing the baseline investment programme for Quality and Standards II

One of the disappointments of Quality and Standards II has been the difficulties faced by stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme. We have addressed this by publishing the agreed list of projects for this regulatory control period. This list contains a fair degree of definition and detail but we will requuire further definition to allow us to monitor the delivery of the investment programme that has been funded in this draft determination. We will ensure that customers are not asked to pay twice for the same output.

Investment programme deliverability

We have funded a large capital programme that should deliver both the Ministers' 'essential' and 'desirable' objectives. Our views on deliverability have taken account both of experience south of the border and of Scottish Water's comments in its business plan.

How Ofwat assesses capital expenditure efficiency

Capital maintenance econometrics

Ofwat's econometric modelling of capital maintenance uses statistical regression analysis to establish a relationship between the costs incurred by companies and a defined set of cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By controlling the principal external cost drivers in the models, Ofwat can determine relative efficiency with a degree of accuracy.

The cost drivers that are included within the econometric models are known as 'explanatory factors'. There are nine models and they take different forms. These are summarised in Table 8.

Table 8: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Unit cost	Total connected properties
Water distribution infrastructure	Log linear	Length of main; total connected properties
Water distribution non- infrastructure	Log linear	Pumping station capacity; water service reservoir and storage tower capacity
Water management and general	Log linear	Billed properties; proportion of billed properties that are non-household
Sewerage infrastructure	Log linear	Length of sewer; number of combined sewer overflows; proportion of critical sewers
Sewerage non- infrastructure	Unit cost	Number of pumping stations
Sewage treatment	Log linear	Total load; total number of works
Sludge treatment and disposal	Unit cost	Total weight of dry solids
Sewerage management and general	Unit cost	Billed properties

⁹ The WIC 18 baseline attempted to define all of the projects that comprised Quality and Standards II. It took some three years to define all of the projects satisfactorily.

We have used these models to assess the level of capital maintenance for Scottish Water. Using these models allows us to ensure that we have allowed an appropriate level of capital maintenance which should ensure that customers receive value for money both in the short and in the longer term.

Capital works unit costs

We have used the Ofwat capital works unit costs, or 'cost base', approach to assess the relative efficiency of Scottish Water in procuring and implementing capital projects. Ofwat uses this technique to inform its assessment of relative efficiency for both capital maintenance and capital enhancement expenditure.

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. We have compared the standard costs submitted by Scottish Water with those of the companies south of the border to assess relative procurement efficiency. We adjusted the results of our capital cost modelling using the same approach as we adopted for making adjustments to the level of operating cost.

Conclusion

Our approach to the Strategic Review of Charges 2006-10 has drawn on the tried and tested methods of Ofwat. We have also sought to learn from our work in completing the Strategic Review of Charges 2002-06 and the representations that were made to us. We believe that our approach is proportionate and transparent and is fully consistent with the Ministerial Guidance.

Chapter 1

Our approach to the Strategic Review of Charges 2006-10

Introduction

Regulation seeks to ensure that customers enjoy a value for money service. Customers should be able to count on a supply of high-quality, wholesome drinking water, continuing improvement in our beaches and water environment to meet the requirements of EU legislation, and a service that is provided at a reasonable cost. It is the job of the regulators to ensure that customers enjoy a 'silent' service.

Customers rightly expect us to have built on progress since the last Strategic Review of Charges, and to have monitored Scottish Water's performance effectively during the current regulatory control period. They also expect us to ensure that charges are sufficient, but no more than sufficient, to fund the levels of service and investment that were outlined in the Ministers' objectives.

This second full Strategic Review of Charges was commissioned in good time. We have been able to take advantage of the time we have had to make sure that the current Strategic Review is as transparent as possible. All of these efforts are designed to ensure that customers can be confident that they are getting value for money.

Our proposed methodology for the Strategic Review of Charges 2006-10 was set out in five documents that were published during 2004.

The proposed methodology covered the following key areas:

- our work plan;
- the regulatory framework in Scotland and lessons learned;
- the calculation of prices;
- the scope for efficiency operating cost; and
- the scope for efficiency capital expenditure.

This volume summarises the methodology that we have followed in completing this draft determination of Scottish Water's charges.

Regulatory information

Information is vital to effective regulation. We ask Scottish Water for a wide range of information, covering all aspects of its water and waste water businesses. This information allows us to monitor and report on Scottish Water's performance. We continually re-assess these information requirements.

The information we request is set out in Figure 1.1.

Figure 1.1: Regulatory Information

	Submission	Frequency of submission	Team that receives the submission
WIC 1/9/14/22	Non-domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 4	Domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 5	Customer service performance return	Quarterly	Competition and Customer Services
WIC 6	Quality performance assessments (written)	Quarterly	Competition and Customer Services
WIC 18	Quality and Standards final output	Ad hoc	Investment and Asset Management
WIC 19	Investment appraisal audits	Annually	Investment and Asset Management
WIC 24	Leakage strategy	Annually	Investment and Asset Management
WIC 25	Resource accounting and budgeting (RAB)	Monthly	Costs and Performance
WIC 43	Annual Return 2003-04	Annually	Office-wide
CIR	Capital Investment Return	Quarterly	Investment and Asset Management
WIC 55	Strategic Review of Charges – regulatory accounts	Ad hoc	Costs and Performance

In England and Wales it is water industry practice for Ofwat to use a consultant engineer, known as a Reporter, to help verify information submissions. The Reporter audits the information provided to the regulator by the companies and highlights any issues or inaccuracies.

Following discussions involving the Scottish Executive, this Office and Scottish Water, we appointed a Reporter for the water industry in Scotland in December 2003. This has improved the regulatory process and the reliability of regulatory submissions in Scotland.

The Reporter is Mr David Arnell of Black and Veatch Consulting. He is required to review all aspects of Scottish Water's information submissions, as directed by this Office. This includes auditing both the annual regulatory return submitted by Scottish Water and its business plan submissions, and scrutinising the costing scope and content of the proposed investment programme. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales. The Reporter is independent of Scottish Water.

As well as this Office, the Scottish Executive, the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA) can ask the Reporter to examine Scottish Water's performance in areas relevant to their statutory duties.

This audited information has informed our work in assessing the scope for efficiency and the sustainable level of charges. It has led us to commission further work to understand the appropriate scope of Scottish Water's proposed investment plan.

Final decisions about the charges that will be paid by customers from April 2006 will still not be made for some five months. Volume 1 of this Strategic Review of Charges 2006-10 sets out our draft determination. The new Commission will listen to all representations from stakeholders on the draft determinations until 23 September.

Ensuring transparency and accountability

We have provided stakeholders with a number of opportunities to make their views known to us.

In preparing the Strategic Review of Charges we undertook a number of initiatives designed to improve the

transparency and accountability of regulation. We introduced 'stakeholder information days', which were held approximately 'every six weeks. These provided a forum for us to outline our progress and for stakeholders to have their say. A summary of the meetings is available on our website. Similarly, we offered a separate briefing to members of the Scottish Parliament.

A staged approach

We included a number of interim announcements in our work plan. For example, we commented on the likely prospects for charges after Scottish Water's first draft business plan. We also provided information to Scottish Water on the cost of capital that we proposed to use and a range for its initial regulatory capital value. Where possible, we have made our analytical tools available to stakeholders.

The financial model is one of the key tools. In common with other regulators, we have used a financial model to calculate the revenue that will be required from customers. The financial model allowed us to assess different cost, investment and timing scenarios so that we can be sure that we have chosen the option that represents best value for money for customers. The financial model was subjected to an extensive external audit. This audit reviewed both the workings of the model and internal processes, such as version control, in preparing the Strategic Review of Charges.

The financial model, which is available on our website, is constructed using Microsoft Excel©¹⁰.

The work plan that we adopted in preparing the Strategic Review contains the following key events:

- Minister's commissioning letter for the 2006-10 Strategic Review of Charges;
- Scottish Water submits its Annual Return for 2003-04;
- Quality and Standards III consultation;
- · Principles of Charges consultation;
- Scottish Water's first draft business plan;

¹⁰ Stakeholders who wish to download the model will require a licensed copy of Microsoft Excel©.

- Ministerial Guidance;
- Scottish Water's second draft business plan;
- Scottish Water submits its Annual Return for 2004-05;
- WICS' draft determination of charges;
- · opportunity for representations by stakeholders; and
- New Water Industry Commission final determination of charges 2006-10.

The full workplan is reproduced in Appendix 3.

Minister's commissioning letter for the 2006-10 Strategic Review of Charges

Ross Finnie, Minister for the Environment and Rural Affairs, asked us to begin work on the Strategic Review of Charges. This letter set out initial policy considerations and detailed proposed changes to the regulatory framework.

Scottish Water submits its Annual Return for 2003-04

The Annual Return is the principal information submission that Scottish Water makes to us. The return includes information about customers, assets and financial performance. It also covers progress on the agreed investment programme. The Annual Return informed the draft determination of charges.

Quality and Standards III consultation

The Scottish Executive coordinated a multi-stakeholder process to determine the objectives of the investment programme for the period 2006-14. This consultation provided one of the main opportunities for stakeholders to express their views to the Scottish Executive.

Principles of Charges consultation

This important Scottish Executive consultation discussed how customers should pay for water services.

Scottish Water's first draft business plan

Scottish Water provided its first draft business plan to us on 29 October 2004. We had provided Scottish Water with detailed guidance on the requirements for the business plan in June 2004. The first draft business plan was an important opportunity for Scottish Water to set out its strategy in some detail and to highlight any factors it wanted us to take into account in setting efficiency targets or charges.

This plan also contained Scottish Water's view of an appropriate investment plan for the 2006-10 regulatory period. This took account of Scottish Water's knowledge of the Quality and Standards III process, any likely backlog from Quality and Standards II, and its views on the size of a programme that could be efficiently managed.

Ministerial Guidance

Detailed guidance was provided by Ministers in February 2005. This guidance outlined the priorities for investment in the next regulatory control period and the principles that should be applied in setting tariffs for customers. The guidance also set the amount of public expenditure that would be available.

Scottish Water's second draft business plan

The second draft business plan was Scottish Water's opportunity to communicate its strategy, objectives and resource requirements to this Office in light of the Ministerial Guidance on investment priorities. This plan reflected their interpretation of the Ministerial Guidance that was provided at the end of February 2005. The plan also contained a detailed investment programme that, in the opinion of Scottish Water, meets the priorities that were set out in the guidance. We have published this investment plan in full.

WICS' draft determination of charges

Our draft determination outlines our initial proposals for Scottish Water's charge limits for the 2006-10 regulatory period.

Scottish Water submits its Annual Return for 2004-05

This Annual Return is particularly important as it will inform the final charge limits in the Strategic Review of Charges.

Opportunity for representations by stakeholders

Following publication of this draft determination, customers and stakeholders can make representations on the initial proposals until 23 September. During this period, there may be further guidance from Ministers.

New Water Industry Commission's final determination of charges 2006-10

The final determination will be published on 30 November 2005 following consideration of representations by the new Water Industry Commission. This will be the final determination of the revenue requirements and charging levels for Scottish Water for the period 2006-10. It will explain in detail the processes the new Commission has gone through in establishing charge caps.

Summary work plan for May 2004–May 2006

There were three major changes to our proposed work plan that we published in July 2004. These related to the publication of our proposed approach to assessing the scope for efficiency in capital expenditure, our plans to publish draft efficiency targets for capital expenditure and operating costs, and the timing of the Ministerial Guidance.

The Ministerial Guidance was published on 10 February 2005. This was slightly later than expected but did not

impact our work plan.

We had originally intended to publish our proposed approach to setting efficiency targets in a single volume. Unfortunately, we had to delay the publication of our approach to setting capital expenditure efficiency targets because Scottish Water was not able to provide us with reliable information on the extent of the Quality and Standards II investment programme that will not have been delivered by April 2006. We published our approach to setting targets for capital expenditure efficiency in December 2004.

In its first draft business plan, Scottish Water included a number of representations about our approach to setting targets. It also suggested a significant number of special factors that it believed we should take into account. We therefore decided to review both our approach and Scottish Water's submission on special factors in some detail. This precluded the early publication of our views on the scope for operating cost and capital expenditure efficiency targets.

External advice

We have delivered most of the work plan outlined above using in-house office resources. In certain areas, we have taken specialist advice from a number of companies with appropriate financial, asset management and audit expertise. This was cost-effective for our Office and ensured that the Strategic Review of Charges benefited from the perspective of external experts.

In addition, we have been fortunate in being able to seek advice and comment from three senior advisors: John Banyard OBE, Sir Ian Byatt and Professor David Simpson. John Banyard was an Executive Director of Severn Trent plc and is widely regarded as one of the leading experts in asset management in the water and sewerage industry. Sir Ian was the former Director General of the Office of Water Services and Chief Economics Advisor to HM Treasury. Professor Simpson was former Economic Adviser to Standard Life, and his previous post was Professor of Economics at the University of Strathclyde.

We also sought detailed comments on this draft determination from Thomas Sharpe QC and his legal team. This team comprised junior counsel Meredith Pickford and Shepherd and Wedderburn. These comments have been incorporated into each of the volumes.

Chapter 2Background

Introduction

The principal statutory duty of the Water Industry Commissioner for Scotland (WICS) is to promote the interests of customers. We promote the interests of customers primarily by encouraging Scottish Water to become more efficient. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers. Scottish Water can therefore become more efficient by reducing its cost to deliver an acceptable level of service or by improving its service to customers without increasing its costs.

The last Strategic Review of Charges covered the period 2002-06. In November 2005 the new Water Industry Commission will publish its final determination of charges for the Scottish water industry. The final determination will outline the charge implications for customers of Scottish Water for the period 2006-10.

Our intention throughout this Review has been to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency, and targeting¹¹.

In this chapter we outline the background to our work in assessing the appropriate level of charges. We set out and explain the background of the Review and the current regulatory framework.

Economic regulation

Before we set out the framework for the next Strategic Review of Charges, it is important to explain the role of regulation within the water industry in Scotland.

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Customers should not have to pay higher charges or accept lower levels of service because they are unable to choose their supplier.

Network utility industries tend to be monopolies because the cost of replicating the network is excessive. Economists describe them as involving a significant 'natural monopoly' element. A natural monopoly refers to the situation where there is only one firm supplying a product in the market, but this is not the result of the behaviour of the firm. Instead, it arises because it is the sensible way to organise the industry and it is in the best interests of customers.

However, the behaviour even of natural monopolies may work against the customer interest if unchecked. There are two ways in which this might happen. First, if the customer has no choice about where to purchase a service, the monopoly has an incentive to charge an excessive price and to make excessive profits. Second, in the absence of competition the monopoly faces no incentive to innovate and improve its efficiency over time.

Economic regulators¹² seek to establish a tight budgetary constraint on the regulated body. In other words, clear statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent. This can be achieved by fixing the maximum return available (unless targets are beaten) or by limiting the total cash funds that may be consumed.

The tight budgetary constraint should focus the attention of management on delivering ongoing improvements in value for money to customers. This explains why regulators publish regular assessments of the financial performance of the companies or organisations they regulate.

In a competitive market, companies face similar tight budgetary constraints in that they have to match their costs to the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

¹¹ The Better Regulation Task Force was established in September 1997. It is an independent body that advises Government on action to ensure that regulation and its enforcement accord with the five Principles of Good Regulation. For further information see http://www.brtf.gov.uk.

Regulation of a public sector corporation is not unique. Postcomm fulfils a similar role to WICS in its regulation of the Royal Mail. The Civil Aviation Authority (CAA) also has economic regulation responsibilities for the locally owned Manchester Airport.

The creation of Scottish Water

The Strategic Review of Charges 2006-10, unlike its predecessor, has focused solely on the activities of Scottish Water. In the last Strategic Review of Charges (2002-06), the creation of Scottish Water from the three previous water authorities was still subject to parliamentary approval.

The three separate authorities remained in existence until the formation of Scottish Water on 1 April 2002 under the Water Industry (Scotland) Act 2002. Under sections 21-23 of the Act the functions, property, liabilities, and staff of the water and sewerage authorities were transferred to Scottish Water.

Scottish Water remains in the public sector, and is owned by and accountable to the Scottish Parliament through the Scottish Ministers.

Scottish Water has completed three years in its new form and has made solid progress in reducing its operating costs. To date, progress in delivering the capital programme has accelerated but is still less encouraging than the improvements made in reducing operating costs.

If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower charges than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital. There can be no doubt that customers of Scottish Water benefit significantly from access to attractive terms for public government loans which are much cheaper than the private sector's cost of capital¹³.

It is important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently. However, as the regulator we must take into account that customers of Scottish Water are more immediately exposed than customers in England and Wales to the financial risks of the business. This is because there are no private equity shareholders.

The Strategic Review of Charges 2002-06

Our analysis at the last review showed that a sustainable water industry in the public sector would require action to be taken in the following areas:

- increased revenue to the minimum level consistent with meeting ongoing maintenance and environmental/ public health compliance;
- · challenging but achievable efficiency targets;
- harmonised and broadly cost-reflective tariffs;
- · improved regulation and financial control;
- improved performance monitoring; and

The level of revenue

We showed that the Scottish industry had spent considerably more, in the past several years before that review, than it received in customer charges. We explained that this was a problem because there was a likelihood that sustained investment at current levels will be required for the foreseeable future.

Continuing to increase net borrowing significantly to eliminate the gap between revenue and expenditure will only make matters worse. Borrowing may delay a charge increase, but it will increase future bills by the interest payable on any additional borrowing. Net borrowing cannot increase at a faster rate than the value of the asset base. In providing our advice on the level of revenue, we took into account a clear customer concern that the industry had 'to get its house in order' and that, as a commodity business, 'it should learn to live sustainably without real increases in price'. We believe that the revenue increases that were implemented will ensure that we have a more sustainable industry in the future and that customers will benefit as a consequence.

¹³ We estimate that customers of Scottish Water probably benefit by over £100 million per year. This is the product of the difference between the Ofwat allowed rate of return and that which we have set and the regulatory capital value.

Challenging but achievable efficiency targets

The charges paid by customers in the public sector model are a direct function of the efficiency of the water industry in Scotland. Unlike in the private sector, no dividends are paid to shareholders from any profit. Any surplus in Scotland can go wholly to financing investment and improving service to customers.

We set three separate efficiency targets to cover operating costs, capital expenditure, and the potential savings resulting from the merger of the three authorities. These efficiency targets were challenging but achievable. After three years, we can see real progress in reducing operating costs. Scottish Water is also confident that the creation of Scottish Water Solutions will improve both the timeliness and the efficiency of the delivery of capital investment.

The total annual value to customers if Scottish Water achieved the efficiency targets was projected to be in excess of £400 million a year by the end of the current regulatory period. These efficiencies are important because a sustainable water industry needs to be affordable both now and in the future.

Harmonised and broadly cost-reflective tariffs

When the Minister for the Environment, Sport and Culture, Sam Galbraith MSP, announced his intention to merge the three water authorities, he highlighted the harmonisation of charges as an important benefit. There were clearly significant anomalies in the charges that resulted from the three authority model. It is, for example, much cheaper to supply Dundee than north Fife, yet charges were much higher in Dundee. We considered that a harmonised charge across Scotland was equitable for all customers.

There has been some comment about our recommendation that charges for businesses should also be harmonised across Scotland. There were three reasons why we considered that this was important.

- The merger of the three authorities only made sense if cost savings, investment prioritisation and a single management structure were to be introduced. This would remove the justification for differential pricing for the three former areas. The choice therefore is between wholly cost-reflective charging (which will disadvantage the smallest and most rural) and fully harmonised charging.
- Businesses, like households, should not be asked to pay more solely because of their location.
- The distinction between some household and non-household customers was blurred, for example people who work from home, farms and crofts, owners or managers with accommodation in hotels or on school and business sites.

We still consider that it would have been difficult for Scottish Water to defend having different charging regimes in different parts of Scotland.

Regulation and financial control

We drew on the information contained in the 2000-01 Annual Return to write the Strategic Review of Charges 2002-06. This was the first time that such standardised information had been available. In the past three years we have endeavoured to improve further the overall quality of regulatory information. This is crucial to improving the financial and customer service performance of the industry.

Improved monitoring

Monitoring performance is central to regulation. This explains why we sought ministerial approval for the annual reports on the performance of the industry in Scotland and for a joint project with the quality regulators to agree how the outputs of the capital investment programme should be monitored. Increased information about performance is only valuable if, as a result, customers get a better level of service or the costs of the industry can be sustainably reduced.

Performance monitoring has developed significantly in the last three years. This monitoring takes two forms:

ongoing collection and analysis of information, and publication of annual reports on:

- Costs and Performance;
- Investment and Asset Management; and
- Customer Service.

These reports are objective analyses of the current performance of the industry in Scotland. We believe that our performance monitoring has already brought results. Scottish Water is likely to have reduced its operating costs by £145 million a year in real terms.

Resource accounting and the Strategic Review of Charges 2002-06

In reviewing the outcome of the Strategic Review of Charges 2002-06, it is important to explain the impact on customers' bills of the introduction of resource accounting. Some commentators have suggested that the introduction of resource accounting directly led to higher bills for customers. This topic was discussed in detail by the Parliament's Finance Committee. We believe that the introduction of resource accounting did not have an impact on the charges paid by customers. Indeed, the introduction of resource accounting led to increased scrutiny of the value of assets owned and the depreciation policies used by the industry. This will have contributed to the progress of the past few years towards a more sustainable public sector water industry that can continue to meet the expectations of customers.

Resource Accounting and Budgeting (RAB) was fully introduced in April 2001. The Minister's commissioning letter for the 2002-06 Strategic Review of Charges set public expenditure limits on a resource accounting basis. It also made clear that we should regard these as maximum limits and that we should demonstrate, by means of risk analysis, that our advice on charges was consistent with these maximum limits.

The introduction of resource accounting had no direct impact on the way in which either the former three authorities or Scottish Water managed their businesses or prepared their accounts. The three authorities had always prepared their accounts on an accruals basis. Resource accounting did change the financial control figure that the Scottish Executive used. Instead of monitoring the extent of new borrowing required (refinancing of existing debt at maturity does not count as public expenditure), the Scottish Executive began to measure consumption of resources and capital spending.

Clearly the way in which a company is monitored or analysed does not impact on either its accounts or its underlying business. Consequently, providing that the control total has been correctly adjusted to reflect the difference in how it is calculated, this should have had no impact on the company on the charges that it needs to charge.

Lessons learned from the Strategic Review of Charges 2002-06 and the response of stakeholders

The Strategic Review of Charges 2002-06 highlighted a number of challenges:

- · the need to improve efficiency;
- the potential threat of competition;
- the need to improve understanding of the condition and performance of assets; and
- the desirability of improving the financial sustainability of the industry.

The industry has responded well to all of these challenges and customers can look forward to much improved value for money as a result. Not surprisingly, some stakeholders criticised the last Review and some of the steps that have been taken to meet the challenges highlighted in our analysis.

The areas of criticism have included:

- · the process of harmonising charges;
- · the increase in fixed charges;

- the industry should have been allowed to borrow more;
- the efficiency targets were unreasonable;
- a lack of clarity in roles and responsibilities; and
- a lack of explanation.

We believe that the Strategic Review of Charges 2002-06 set a framework that was appropriate and in the interests of customers of today and in the future. There has been a marked improvement in the industry's efficiency and in its understanding of its assets. We believe that the review made a significant contribution to encouraging these improvements.

In preparing the Strategic Review of Charges 2006-10, we are keen to learn lessons from the criticisms that have been made. We believe that there are a number of steps that we can take to improve the transparency, accountability and perceived proportionality of regulation.

Transparency

Improving process

In July 2004 we published 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10'. This described our work plan in some detail and highlighted all of the information that we collect from Scottish Water. It also gave information about the opportunities for stakeholders to learn more about our work and to ask questions.

Perhaps the most important part of the process begins with the publication of this draft determination. This will be followed by a period for representations about this draft determination from stakeholders. The new Water Industry Commission will publish the final determination of charges at the end of November. These charges will take effect from the beginning of April 2006.

Better explaining our approach

We have held a large number of stakeholder information days, which provided an opportunity for us to explain where we are in completing the Strategic Review of Charges. These sessions also allowed stakeholders to raise their concerns or issues with us.

Helping stakeholders to understand the answer

There are three important ways in which we can help stakeholders to understand the answer. Publishing all of the key inputs to the Review has been an important step. However, we have also endeavoured to present the answer in a way that allows stakeholders to understand what the answer means for them and for customers as a whole. We have also outlined our reasoning and made reference to the evidence that we have relied upon to come to our answer.

We also note comments from some commentators that they found that our reasoning in the last Strategic Review of Charges was not complete. We consider that this current Strategic Review of Charges provides sufficient information for all of the major findings of the review to be replicated.

Providing opportunities for comment

There are three main ways in which stakeholders have been given an opportunity to comment. These are the stakeholder information days, the publication of our proposed methodology, and the period for representations after publication of the draft determination. Each of these plays a valuable role in allowing us to hear the views of stakeholders.

Accountability

We believe that the strengthening of the regulatory framework in Scotland will help improve both actual and perceived accountability. The establishment of a Commission should depersonalise regulation – a Commission arriving at a joint decision is always likely to be considered more accountable than an individual with a similar power.

The proposal to give the Commission the power to determine charge limits within a policy framework set by

Ministers is welcome. This will ensure that authority and responsibility are aligned.

Proportionality

There has been a concern from some quarters (principally Scottish Water and the trades unions) that our analysis lacked proportionality. The assertion was that we had adopted regulatory tools from south of the border and blindly applied these in Scotland, taking little or no account of the maturity, geography and asset base or of the public sector nature of the water industry in Scotland. Similarly, there was a concern about how quickly we asked Scottish Water to narrow the efficiency gap.

We did explain our method for assessing how quickly Scottish Water should close the efficiency gap in some detail. Looking back, it may also have been helpful to reemphasise the importance of spend to save in making our rate of catch-up less demanding.

In the Strategic Review of Charges 2006-10, we have paid particular attention to issues around comparability of companies, costs and levels of service. We have sought to set targets which are proportionate and which take full account of factors that would both increase or reduce the targets.

Other factors

There are two further factors that have had an impact on the Strategic Review of Charges 2006-10. These are changes to the regulation of trade effluent charges and the introduction of a Reporter. We discuss each of these in turn.

Trade effluent

To date, tariffs for trade effluent have not been included in Scottish Water's scheme of charges and we have not played any role in regulating them. Instead, Scottish Water, exercising powers under section 29(3)(j) of the Sewerage (Scotland) Act 1968 has set these charges. In practice this has meant that the total amount raised from customers in trade effluent charges has been limited to the difference between the agreed revenue cap and the

amount raised from the tariffs approved in the scheme of charges.

The Water Services etc. (Scotland) Act 2005 provides for the Water Industry Commission to determine charges for all of Scotlish Water's core services. As trade effluent is a core activity of Scotlish Water, trade effluent charges are within these provisions. Consistent with that approach, the Act provides for the repeal of section 29(3)(j) of the Sewerage (Scotland) Act 1968, thereby removing Scotlish Water's power to set trade effluent charges separately.

There are three types of waste water: surface water draining to sewers, foul sewage and trade effluent.

- Surface water refers to the rain water that drains from roofs, yards, pavements, roads and so on.
- Foul sewage refers to waste water (either household or non-household customers) from toilets and washing facilities (sinks, wash basins, showers, baths, etc).
- Trade effluent is liquid waste from industrial or other commercial activity. It can cover a wide variety of liquid waste. Trade effluent is more difficult to treat and can represent a hazard. Businesses must have the consent of the sewerage company before discharging trade effluent into public sewers.

Paying for trade effluent

Historically, trade effluent charges in the UK were based on the volume of the discharge. In 1976, the National Water Council and the Confederation of British Industry agreed the Mogden formula as a basis for trade effluent charges. This formula sought to increase the cost-reflectivity of the charges that were made for the treatment of trade effluent. The formula sets a higher charge for more concentrated effluent that will require a higher level of treatment.

As part of the Strategic Review of Charges 2006-10, we have consulted with trade effluent customers, appropriate representative bodies and Scottish Water about the appropriate way to regulate trade effluent charges. We have created a tariff basket for trade effluent services. This will increase the transparency of setting trade effluent charges.

Reporters

Successful regulation relies on high-quality information and analysis. This is especially true for the Strategic Review process where we will place high reliance on the accuracy of information provided to us by Scottish Water.

The agreement between this Office, Scottish Water and the Scottish Executive on the ten principles included the introduction of a Reporter.

There were five reasons why we wanted to appoint a Reporter.

- There was a need for an independent assessment of the quality and reliability of information provided by Scottish Water.
- We believed that a Reporter could assist in accelerating the improvement in information quality in Scotland.
- We believed that a Reporter could help Scottish Water ensure that proper processes for collecting, storing and using information were established.
- We believed that a Reporter could assist us in defining core and non-core activities and ensuring that the retail/wholesale split was robust.
- The Reporter system has been a key element in Ofwat's regulation of the water industry south of the border.

Conclusion

In the last five years we have established a strong foundation for regulation of the water industry in Scotland. Within this framework, Scotlish Water has already reduced its operating costs by some 20% and, by the end of the current Review period, we expect that it will have reduced operating costs by 30% or £145 million annually in real terms. This improved efficiency will benefit customers on an ongoing basis if pressure is maintained in the longer term.

Chapter 3

The calculation of prices

Introduction

In this chapter we discuss how we have calculated the charges that customers will have to pay in the next regulatory control period.

For many customers of water and sewerage services, price is the single most important issue. This chapter therefore examines:

- the costs that have to be recovered by Scottish Water;
- the way charges are calculated;
- how adjustments to charges are made when circumstances change; and
- · how financial risk is managed in the public sector.

Where costs are incurred

Rain water may well fall from the sky, but turning that raw water into high-quality water and disposing of the waste water is a costly and complex operation.

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scottish Water's 2004 regulatory return, it would cost some £27 billion to replace all of the water industry's assets in Scotland. This is more than £5,000 for every person in Scotland.

Customers, however, are not primarily concerned with how the service is delivered or the assets that are employed. They want a reliable and high-quality service to be available on demand. In particular, they want to be assured that the service they receive for the amount they pay represents value for money.

The Scottish Executive's consultation 'Paying for water services 2006-10'

In June 2004 the Scottish Executive launched a consultation on the principles of charging for water. The consultation was prompted by the negative reaction of some customers to the introduction of broadly cost-reflective charging (including higher standing charges) and the harmonisation of charges across Scotland. Although this benefited many customers (households in the north, and properties with higher rateable values in the north and lower rateable values in the east), a large number of small business customers who did not use much water saw significant percentage increases in their charges and as a result were critical of the changes.

The Executive's proposals in 'Paying for water services 2006-10' were presented in two sections: 'Proposed principles of charging' and the 'Application of principles'. The consultation put forward proposals on the principles of charging in four areas:

- Charging for services: The Scottish Executive suggested that, subject to safeguards, customers should pay for the service they receive.
- Harmonised charges: The Executive suggested that, since Scottish Water provides services on a national basis, it is right that customers should pay for those services on a consistent basis throughout the country.
- Cost reflectivity: The Executive proposed that charges for similar types of customer should broadly reflect both the fixed and variable costs of supplying those customers (subject to the principles of harmonisation and affordability). This would appear to be consistent with the Water Framework Directive's requirements that charges for water should be cost reflective.
- Making changes to charging structures: The Executive proposed gradually to introduce changes in tariffs over a number of years.

The consultation also considered the application of the principles of charging. The following issues were addressed:

- Cross subsidies: A cross subsidy exists when one group of customers pays more (in percentage terms) relative to their cost of supply than another group of customers. The Executive differentiated between desirable cross subsidies (resulting from the policy to harmonise charges across Scotland or to link household charges to Council Tax bands) and unintended cross subsidies. The Executive also commissioned work to understand the nature and extent of any unintended cross subsidies. In the consultation, the Executive also sought views on how quickly any such cross subsidies should be unwound.
- Household charging: The Executive proposed to discontinue the current system of discounts and to use the proceeds to provide more targeted support to those in receipt of Council Tax benefit.
- Non-household charging: The Executive proposed to introduce new methods of charging for unmeasured customers and for surface and property drainage in the 2010-14 regulatory control period.
- The balance between charging and borrowing:
 The Executive proposed to keep the total level of borrowing by Scottish Water broadly constant in real terms.
- Funding expansion of the public networks: The Executive set out proposals to share the cost of growth in the network between existing and future customers.

Our response to the consultation

We agreed with the principles of charging proposed by the Scottish Executive. The first three of these principles are fully consistent with the principles that we applied at the time of the last Strategic Review of Charges. On the proposals for making changes to charging structures we noted that there is no easy way to implement these changes. While we recognise that it is not desirable to increase bills sharply, we are also aware that introducing changes more slowly requires those who are currently paying more than their fair share to continue to pay (at least) a little more in the interim. We regard this as a political question and welcome the clear guidance provided by Ministers in the Ministerial Guidance.

Depreciation

The effectiveness and value of assets decline over time and customers should bear these costs as they receive the benefit from use of the assets. Although effective asset management can help to reduce costs, asset replacement costs will continue to have a major impact on customers' bills.

The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc). From a regulatory point of view, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge to be recovered from customers' charges. There are two types of depreciation charge: an infrastructure renewals charge and a standard depreciation charge on the non-infrastructure¹⁴.

Infrastructure renewals charge

Infrastructure assets such as sewers and water mains usually have very long lives. It is particularly difficult to assess these lives accurately. This is because different types of construction (each with a different expected life) have been interconnected throughout the network. For that reason we rely on the portfolio effect¹⁵ and treat the whole infrastructure network as a single system. The complete asset will never become obsolete or require replacement at any one time; instead, it is replaced in

¹⁴ It is possible that the introduction of international accounting standards would end the practice of levying an infrastructure renewals charge. In our calculation of prices we have adopted a prudent approach and not allowed the IRC to be deducted for tax purposes. We have allowed an appropriate capital allowance to be deducted. This significantly increases the tax payable.

The portfolio effect is discussed in 'Principles of Corporate Finance' by Brealey and Myers, Seventh International Edition, 2003, McGraw-Hill, p.187 onwards.

parts as different elements come to the end of their useful lives.

Traditional methods of depreciation for discrete assets which have observable discrete asset lives would be difficult to implement. To overcome the problem, the industry has introduced infrastructure renewals accounting. Under infrastructure renewals accounting, an infrastructure renewals charge is charged to a company's revenue each year. The infrastructure renewals charge is calculated as the average of the forecast capital expenditure on the infrastructure assets over the next 15-20 years.

Non-infrastructure depreciation

We used the same approach to non-infrastructure depreciation as Ofwat uses for the water and sewerage companies in England and Wales. The depreciation charge will be calculated using the straight-line method. We believe that current cost accounting using the modern equivalent asset (MEA) valuation for fixed assets is the most appropriate for regulatory purposes. This approach ensures that:

- customers bear reasonable costs for the use of assets;
- Scottish Water is fairly remunerated for its capital expenditure; and
- Scottish Water is provided with the incentive to invest in new technology and more cost-effective assets.

These assets will be grouped into five categories: very short (assets having a life of up to five years), short (assets having a life of six to 15 years), medium (assets having a life of 16 to 30 years), medium/long (assets having a life of 31 to 50 years) and long (assets having a life exceeding 50 years).

The management of financial risk in the public sector

Risk management is the process of identifying, evaluating and responding to risks. Water and sewerage

businesses are exposed to operational, legal and asset risks that could affect their compliance with public health or environmental standards and to financing risks. In the Strategic Review of Charges 2006-10 we have sought to minimise the exposure of Scottish Water's customers to these risks. One of the main ways in which we have reduced customers' exposure to risk in the public sector model is to move towards the regulatory capital value approach to price setting.

We are also keen to ensure that there are effective controls on access to borrowing. We therefore commissioned a report from ING Barings on the privatised companies' access to debt. If there are no such controls, the incentives to achieve efficiency targets on time are reduced. The Scottish Ministers agreed and made it clear in paragraph 21 of their Principles of Charging guidance that they would not increase lending to Scottish Water beyond the limits set in the final determination.

Managing financial risk in the private and public sectors

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. In the private sector, each utility has a licence to operate that requires it to meet standards of operation that are considered appropriate in terms of social, development, environmental, and public health policy objectives. The economic regulator takes account of all such issues that may arise from legislation or other government guidance when determining the outputs that are to be delivered, and then sets the charge limits accordingly. Thereafter, he depends on shareholder pressure to ensure that these are delivered as efficiently as management can achieve, and simply has to monitor performance to ensure that the defined standards are properly achieved.

In the public sector, the regulator has to assess the lowest reasonable overall cost of delivering the objectives set by the Scottish Ministers. He cannot rely on the presence of capital market forces to deliver efficiency. The duty of the new Water Industry Commission is to set charges such that the Ministers' objectives can be met at the lowest reasonable overall cost.

In both the public and private sectors, economic regulators seek to establish a tight budgetary constraint on the regulated body. In other words, clear statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent. This can be achieved by fixing the maximum return available.

A properly tight budgetary constraint will focus management attention on delivering ongoing improvements in value for money to customers.

Other differences in financial risk

The private sector cost of capital is higher than Scottish Water's cost of debt. Ofwat has recently set a nominal, pre-tax cost of capital of 9.8% (5.1%, real, post-tax)¹⁶. This compares with Scottish Water's average new borrowing rate of just over 4% nominal pre-tax. Indeed, shareholders of the privatised companies can improve their return further by ensuring that the company performs better than the targets set by the regulator. However, shareholders do also have to absorb risks that are currently borne by the customers of Scottish Water. These would include the costs of any external shocks such as the drought in summer 1995.

In the event of such a shock or underperformance by the business (whether caused by management or external operational factors) a private utility can:

- withhold dividend payments to shareholders;
- seek a rights issue; and
- obtain debt in the private markets.

Private utilities do not have the easy option of increasing charges to customers. The presence of private equity acts as a significant 'shock absorber', which protects customers of the water companies in England and Wales. This is because prices set by Ofwat will not normally be influenced by a change in borrowing by an individual company. Ofwat would only adjust prices if the 'shock' was outside the control of management

The Glas Cymru model

It is not necessary to adopt an equity-based or private sector model in order to manage financial risk. Welsh Water, for example, has established a structure that protects customers from financial risk, without a traditional shareholder acting as a shock absorber. Glas Cymru is a not-for-profit company limited by guarantee which is wholly debt financed. Glas Cymru has no shareholders. In this case the risk is borne by the providers of the debt finance.

If there is an unforeseen shock, which could have been avoided or limited through proper management, customers will not suffer because Ofwat is under no obligation to increase the cash value of the return on capital allowed to Welsh Water.

Current situation for Scottish Water

In contrast, if Scottish Water is faced with an unforeseen shock, it must either:

- seek unplanned public expenditure in the form of a loan, or
- · increase charges to customers immediately.

Customers are currently particularly exposed to any shortfall in Scottish Water's performance against targets. This is because there are no transparent incentives to perform and its budgetary constraints are not truly tight. Scottish Water can seek to use contingency margins within public expenditure limits and the cost of this extra borrowing would be passed on to customers.

We believe that Scottish Water's customers are entitled to a similar level of protection from shocks as customers south of the border. We have therefore decided to set prices at this Strategic Review on the same basis as Ofwat, using 2003-04 as our base year. In setting the allowed level of operating costs in the early years of the next regulatory control period, we have taken account of the level of performance that Scottish Water has indicated that it will achieve in its business plans. We have made adjustments to the RCV to reflect the slower than expected delivery of the Quality and Standards II

¹⁶ Future water and sewerage charges 2005-10: Final Determinations, p.41.

investment programme in order to ensure that customers are not disadvantaged.

Ministers have now undertaken not to increase borrowing beyond the levels set in the final determination¹⁷.

How we propose to determine charges for the 2006-10 period

The role of the new Commission is to set charges that are sufficiently high – but no higher – to ensure the sustainable delivery of the objectives for industry set by the Scottish Ministers. We have therefore scrutinised costs carefully.

The costs faced by customers can be categorised into three main areas:

- running costs;
- costs associated with the use of existing and new assets; and
- costs of public private partnership (PPP) contracts.

We used a financial model to establish an appropriate level of revenue that is consistent with:

- · meeting these costs, and
- ensuring that Scottish Water should be able to deliver the level of service to customers that will be defined by the objectives set out in the Ministerial Guidance¹⁸.

This model has allowed us to ensure that an appropriate balance is struck between current and future customers. We have also sought to ensure that customers in general are protected from unnecessary fluctuations in their charges.

In calculating charges for customers, we used tariff baskets to divide the identified revenue requirement between customer groups. These tariff baskets have taken account of the February Ministerial Guidance.

The RCV method of price setting

At this review we have moved towards the RCV method of price setting. We introduced a regulatory capital value for Scottish Water. Scottish Water will receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV. Depreciation (reflecting the costs of using existing assets) will reduce the RCV.

The rate of return is the cost associated with managing and financing the above-ground asset base. The cash cost of replacement is covered by the depreciation charges.

The revenue that we allowed Scottish Water was calculated as follows:

Return allowed on the regulatory capital value + allowable operating costs + depreciation on non-infrastructure assets + the infrastructure renewals charge + the costs of PPP contracts.

We have set revenue such that Scottish Water will comply with all the cash-based financial ratios (used by Ofwat in its 2004 price determinations) if it meets the terms of its regulatory contract in full. We discuss these ratios in more detail below.

The product of the RCV and the allowed rate of return gives the total return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

The allowed level of revenue includes an appropriate allowance for operating costs. Our assessment of operating costs takes into account inflation, the scope for efficiency and an allowance for efficient new operating costs. It is important to highlight that our assessment of efficiency includes a detailed comparison of both the relative level of cost incurred and the scope of activities delivered.

¹⁷ Points 20 and 21 of the Minister's February Guidance on the principles of charging outline this commitment in detail.

See the Scottish Executive's consultation document, 'Investing in water services 2006-10'.

We allow for asset costs in two ways, that is the allowed cash return on the RCV and an allowance for depreciation. The allowance for depreciation and the infrastructure renewals charge ensures that sufficient funds are available to replace assets that are at the end of their useful lives.

The PPP contracts effectively swapped initial capital costs, financing and maintenance costs and operating costs over the life of an asset for a series of annual payments. We have scrutinised these costs carefully. We have allowed PPP costs in full and have added an extra allowance to reflect the required investment identified at PPP sites.

One important feature of the regulatory capital value method of price setting is that we do not have to take decisions about how much extra borrowing Scottish Water should seek. The method of financing (whether from retained surplus or from new debt) will not have an impact on the price paid by customers. However, if debt increases as a proportion of the RCV, future customers will face either higher prices or a service that is less able to absorb operational shocks.

Monitoring of the RCV and the ratio of total debt to the RCV should therefore provide stakeholders with a useful indicator of the financial performance of the water industry in Scotland. The RCV will increase in line with the profile that is established at the start of the regulatory control period.

The introduction of charge caps

In this Review, we have determined a series of charge caps rather than a general cap on revenue. We believe that introducing a charge cap is in the general interest of customers and is in line with the new regulatory framework. A charge cap largely insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory period. We have translated the required revenue into a series of charge caps for our tariff baskets. The weightings of these tariff baskets reflect the guidance that we received from Ministers following their consultation on the principles of charging.

Customers will now be better placed to understand the maximum charge that they are likely to have to pay by looking at their use of the water and sewerage service and the charge cap for the relevant tariff basket.

The introduction of regulatory accounts

In the last Strategic Review of Charges, we commented on the advantages to be gained from a proper accounting and legal separation between Scottish Water's core and non-core activities. We were therefore pleased when the Water Industry (Scotland) Act 2002 limited the remit of this Office to promoting the interests of customers of the core business. We are now required to distinguish between Scottish Water's core and non-core functions. The Water Services etc. (Scotland) Act 2005 also required us to differentiate between Scottish Water's wholesale and retail functions.

Scottish Water's statutory accounts are not sufficient to provide the information that we now require. In particular, they only detail the financial performance of Scottish Water as a whole and, as such, are unable to provide a specific breakdown of costs by activity.

Other regulators have overcome these limitations by introducing a set of parallel, regulatory accounts. These accounts are tailored to provide the specific information required for effective regulation. We have adopted the practice of other regulators by asking Scottish Water to complete regulatory accounts.

In particular we have adopted Ofwat's regulatory accounting guidelines (RAGs) as the basis for our regulatory accounting guidelines. Where we have amended or developed these guidelines for application in Scotland we have done so simply to ensure that they are fully consistent with Scottish Water's statutory duties. However, in so doing, we have endeavoured to ensure that they remain as consistent as possible with the original Ofwat guidelines. This is important to our detailed comparison of the financial performance of the industry in Scotland.

Financial modelling

We built a financial model to allow us to calculate the revenue that Scottish Water requires to carry out its core functions. We have also used a tariff basket model, which translates the revenue collected from customers to the tariffs they will pay.

The model is constructed in Microsoft Excel® and consists of a series of linked spreadsheets. The model goes forward to March 2025. We also developed a detailed user manual which is available on our website.

Input information

The financial model requires robust and detailed information. We provided Scottish Water with the input tables for the financial model as part of the business plan guidance, which we issued in June 2004.

The model also contains financial assumptions, including information on interest rates and inflation expectations. In the Strategic Review we have used three indexes to measure inflation, namely:

- the Retail Price Index for setting charge caps and the calculation of the nominal cost of capital;
- the Consumer Price Index for all other non-asset costs; and
- the Construction Output Price Index, to assess the impact of increases in prices on investments.

Other assumptions we made are outlined in Table 3.1 below:

Table 3.1: Other assumptions in the financial model

Title	Assumption	Value
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure excluding PPP	1.5%
Prepayments and accrued income	Percentage of revenue	5.5%
Other debtors	Percentage of revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25.6%
Accruals and deferred income	Percentage of operating expenditure including PPP	28%
Other creditors	Percentage of operating expenditure including PPP	8%

Financial ratios

One of the key considerations of our modelling was the financial sustainability of Scottish Water. The model automatically calculated key financial ratios. Our move towards the regulatory capital value method of price setting has allowed us to make direct comparisons of Scottish Water's financial sustainability with that of the companies south of the border. We have compared Scottish Water's financial ratios with those used by Ofwat in its last two price reviews.

Charge caps have been set to ensure that Scottish Water is placed on a sound financial footing. This should minimise the financial risks to customers.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, 'Final determination: Future water and sewerage charges 2000-05'. These ratios are shown in Table 3.2.

Table 3.2: Ofwat's target ratios for 2000-05

	Water and sewerage companies	Large water only companies	Small water only companies
Historic cost interest cover	Min 2x	Min 2.25x	Min 2.5x
Average gearing (D/D+E)	45-55%	45-55%	45-55%
Cash interest cover (EBITDA Basis)	Min 3x	Min 3.4x	Min 3.75x
Cash interest cover (EBIDA Basis)	Min 2x	Min 2.25x	Min 2.5x
Debt payback period (EBITDA Basis)	Max 5 years	Max 5 years	Max 5 years
Debt payback period (EBDA Basis)	Max 7 years	Max 7 years	Max 7 years
Cashflow to capital expenditure ratio (EBDA Basis)	Min 40%	Min 40%	Min 40%

In 'Future water and sewerage charges 2005-10: Final limits', Ofwat outlined the financial indicators that it has used to set prices for the next regulatory control period. Table 3.3 shows these ratios.

Table 3.3: Ofwat's target ratios for 2005-10

	Target
Cash interest cover (funds from operations/gross interest)	Around 3 times
Adjusted cash interest cover (funds from operations less capital charges/gross interest)	Around 1.6 times
Adjusted cash interest cover (funds from operations less capital maintenance expenditure/gross interest)	Around 2 times
Funds from operations/debt	Greater than 13%
Retained cash flow/debt	Greater than 7%
Gearing (net debt/regulatory capital value)	Below 65%

Ofwat adopted these financial ratios after detailed consultation with both the Credit Rating Agencies and the financial markets. The target value of the ratios was set at a level that was consistent with a company maintaining 'investment grade' status for its debt.

How we have used these ratios in the Strategic Review of Charges 2006-10

Where Ofwat has stated that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target. We have adjusted price limits in 2009-10 to ensure that Scottish Water remains compliant with each of these cash-based ratios

We are also publishing the two debt payback period ratios and the cash flow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. It is desirable that Scottish Water should broadly comply with these guidelines. However, we have not changed charge limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are now outdated. We believe that it is useful to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

Setting an initial RCV

We consulted on our approach to establishing the initial RCV for Scottish Water as part of our methodology consultation. We explained that there are four broad approaches that regulators can use to establish the initial RCV of a regulated utility in the private sector:

- An accounting approach the RCV takes into account the asset value of the company.
- A market value approach the RCV adopts the value placed on the company by the financial markets.
- A comparator approach the RCV is set by making a comparison with the RCV of a similar company.
- A discounted cash flow approach the RCV is calculated by using financial valuation techniques.

Most UK regulators have used the second approach to estimate the initial RCV of the regulated business. It is obviously not possible to apply this method for a public corporation such as Scottish Water.

We wanted the RCV to be sufficient to ensure that if Scottish Water met its obligations under its regulatory contract, then it would comply with all of the targeted financial ratios in 2009-10. The initial RCV was calculated based on the investment programme delivered, our inflation expectations and our allowances for depreciation.

The 2009-10 RCV will be rolled forward in all future regulatory control periods.

We checked this initial RCV with a range of comparisons including:

- relative asset bases (in terms of both value and structure);
- non-infrastructure capital investment;
- Welsh Water's debt to RCV ratio;
- the English and Welsh companies' funding costs to RCV ratio (ie debt and dividends); and

assets relative to the type and number of customers served.

This analysis showed that the initial RCV was reasonable.

Setting the allowed rate of return

In the private sector, a regulator sets an allowed rate of return. The regulator will set this rate of return to reflect current and expected market conditions. The regulator has a duty to set an appropriate rate of return (a weighted average cost of capital) such that an efficient company can properly finance its functions. A company may choose a mix of debt and equity funding, but its rate of return (unless it out-performs efficiency targets) is capped.

In the public sector the regulator cannot set the rate of return based on his observation of the cost of capital in the market. Scottish Water's cost of debt is set by Government. As a public sector organisation it has no contributed equity capital, although it does generate and reinvest trading surpluses.

The allowed rate of return is the rate of return that we believe Scottish Water requires to meet the objectives that have been set by Scottish Ministers. If we set the allowed rate of return at too low a level, there is a risk that Scottish Water would not have sufficient funds to meet its obligations. This could result in debt increasing to unsustainable levels. This would penalise future customers to the benefit of current customers. Alternatively, it could result in delays to the promised environmental, public health or customer service benefits. Customers would certainly pay lower charges if the rate of return was set too low, but they would also receive a poorer service.

If we set the allowed rate of return at too high a level, customers will pay more than they need to. This would act as a disincentive on management to achieve efficiency targets. Failure to achieve efficiency targets means that customers pay more than is necessary in the medium term. Alternatively, if efficiency targets were achieved in full the level of outstanding debt would

decline significantly relative to the asset value of the company. This would penalise current customers to the benefit of future customers.

The weighted average cost of capital

The market value of a firm is equal to the market value of the equity plus the market value of the debt. The weighted average cost of capital (WACC) is the overall cost of capital for a firm. It takes account of the capital structure of the firm (ie the market value of its debt and equity) and the rates of return it pays on both its debt and equity.

In order to calculate a WACC a regulator therefore has to decide an appropriate rate of return for both debt and equity. He also has to assign an appropriate market value to the debt and equity of the firm. His calculation of the rate of return is further complicated by both taxation and inflation.

Debt and equity are treated differently for tax purposes. Interest charges are an allowable expense for the purpose of corporation tax. The corporation tax advantages of debt are recognised in the post-tax weighted average cost of capital calculation. This is shown in Figure 3.1.

Figure 3.1: Post-tax weighted average cost of capital

The investor is concerned with the real rate of return – that is the return after having adjusted for the effect of inflation.

The formula for calculating the real rate of return is shown in Figure 3.2.

Figure 3.2: Formula for calculating the real rate of return

Real rate of return = nominal rate of return - inflation rate

It is important to differentiate between the real rate of return (the return after inflation) and the nominal rate of return (the return before account is taken of inflation).

Applicability of WACC to a public corporation

Assessing the WACC for a public corporation is problematic. This is because the regulator cannot easily observe the cost of equity and, moreover, estimating the market value of the organisation is difficult.

Setting an allowed rate of return for Scottish Water

Scottish Water does not borrow directly from the capital markets nor does it borrow at commercial rates. Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

To set an allowed rate of return for Scottish Water based on the same principles used by the regulators of private sector utilities, we would have needed to estimate an allowed rate of return on debt and an allowed rate of return on 'customer retained earnings'. Scottish Water should be allowed to earn a return when it uses customer retained earnings as a source of funds.

Although it may seem feasible to estimate a WACC for Scottish Water, issues arise because Scottish Water does not have debt or equity that is publicly traded. We are not therefore able to establish a market-based measure of equity or debt returns for Scottish Water in

the way that we would for a private sector company.

The WACC approach is further complicated because regulators have tended to regard the RCV as a proxy for the enterprise value (market values of the debt plus the equity) of the regulated business. The market value of the equity is therefore equal to the RCV minus the outstanding net debt.

The market value of the equity would normally be estimated using the dividend growth model or calculating the NPV of future cash flows. The dividend growth model cannot be used because Scottish Water does not pay dividends. The NPV approach requires an appropriate discount rate to be established in order to discount cash flows that will occur in the future. However, it would be difficult to justify the use of a discount rate that is different from the allowed rate of return. The NPV approach could not therefore be used since we need a market value to establish the allowed rate of return, but need an allowed rate of return to use the NPV method of establishing a market value.

Our approach

We decided to apply a modified version of the WACC approach. We combined an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

The future real rate of interest on debt for Scottish Water was analysed over a 10 and 20 year period with reference to index-linked gilt securities. The pre-tax allowed rate of return on the customer retained earnings was set at the post-tax allowed rate of return for debt. In real terms this rate is low. Valuing customer retained earnings in this way has replicated within a public sector capital structure the equity buffer that protects customers south of the border from operational or legislative shocks¹⁹.

An additional advantage of this approach is that there is no incentive for Scottish Water to seek to change its current ratio of debt to regulatory capital value. If the

¹⁹ This issue is discussed in detail in Chapter 4.

return on the customer retained earnings had been greater than the return on debt, Scottish Water would have had an incentive to pay down debt. In contrast, if the return on the customer retained earnings had been lower than the return on debt, Scottish Water would have had an incentive to take on more debt.

This approach should make the monitoring of Scottish Water's performance against the financial ratios more straightforward.

Depreciation and additions to the RCV

The value of the RCV changes over time to reflect efficient new investment and depreciation of existing assets. Since the RCV was central to our determination of Scottish Water's revenue requirement, it was important that the initial RCV that we established was adjusted appropriately to reflect asset use and additions.

Figure 3.3: Calculation of required revenue

Revenue requirement = operating costs + public private partnerships (PPP) + infrastructure renewals charge (IRC) + depreciation + cash return on the regulatory capital value

Depreciation and additions play a role in this calculation through the impact they have on the RCV and, in the case of depreciation, as a separate component of the revenue requirement.

Treatment of additions to the asset base

The key role of the RCV in charge setting is to reflect the value in use over the long term of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets this is reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

If Scottish Water has made additions to the RCV which have increased its value (net of depreciation), then the return component of the revenue requirement will be higher and prices will also be higher. Providing capital expenditure has been justifiably incurred in order to provide service to customers, then it is reasonable that customers should remunerate this investment in the RCV.

It is very important, however, that customers are only required to remunerate justifiable expenditure. We have therefore added only appropriate and efficiently procured capital investment to the RCV.

Treatment of depreciation

The role of depreciation is a little more complicated. It affects charges in two ways:

- It was deducted from the RCV and hence represents
 the amount by which the value of the assets has
 fallen. Again, assuming a constant rate of return,
 any reduction of the RCV reduces the amount of
 return allowed in Scottish Water's revenue
 requirement.
- The expected depreciation charge was added to the cash return and operating costs to determine the revenue requirement.

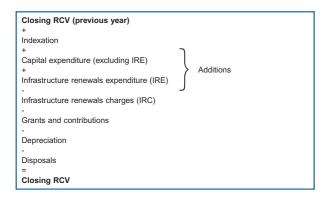
Depreciation therefore influences Scottish Water's revenue requirement both directly and indirectly (by affecting the level of return).

Rolling forward the RCV

The process of adjusting the RCV from its starting value to reflect changes in the asset base is known as 'rolling forward'. In the Strategic Review of Charges we have set the level of efficient new investment and the appropriate depreciation charge. We would adjust the RCV before the next regulatory control period to reflect any extra or inefficient investment.

Figure 3.4 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 3.4: Rolling forward the RCV



In order to ensure that the RCV does not decrease in real terms as a result of general price rises in the industry itself, we adjust the RCV each year to take account of expected inflation.

Interim determinations and logging up and down

In Scotland, a Strategic Review of Charges is carried out every four years, while in England and Wales a price review is carried out every five years. The period of time between regulatory reviews is referred to as the regulatory control period. At a regulatory review, the regulator sets charge caps or revenue caps for the next regulatory control period.

In order to set charge caps or revenue caps, the regulator forecasts the costs that the regulated company will incur over the next regulatory control period, if it carries out its functions efficiently. The revenues recovered by the company must be sufficient to cover these costs.

Ofwat uses two mechanisms to adjust the regulatory price settlement in the event that assumptions made at the price review need to be revised. The first is an 'interim determination of the price limit', which takes place during a regulatory control period. The second is the approach of 'logging up and down' at a regulatory review.

The change in the regulatory framework to create a Water Industry Commission with a power to determine charges makes it necessary to introduce both the possibility of an interim determination and the logging

up and down process. This ensures that Scottish Water is able properly to finance its functions and can recover the costs of any unexpected expenditure that results from uncertainty rather than underperformance.

What are 'interim determinations'?

An interim determination is a reconsideration of a company's charge limits that is undertaken between formal price reviews. The reconsideration is carried out in the light of a particular set of circumstances or factors that were not taken into account at the last Review. Either the firm or the regulator may initiate an interim determination. If Ofwat knows that there is significant uncertainty about a particular area of the price review, it can notify the item. This allows either the regulator or the regulated company to revisit the price limit if better information becomes available. An example would be the rate at which households opt for meters. We have set out our approach to interim determinations and our notified items in Volume 7.

What is logging up and down?

Whereas an interim determination occurs between reviews, logging up and logging down is an adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on charges only in the next regulatory period.

Charge caps and tariff baskets

We established tariff baskets to cover the core services provided by Scottish Water. The use of tariff baskets also helps to ensure that the principles of charging determined by Scottish Ministers are applied in a transparent way. In addition, they bring the charge setting process more into line with the other utility regulators in the UK, such as Ofgem and Ofwat.

The detail of the tariff baskets is available on our website. This gives customers better access to information about bills and will help strengthen the regulatory regime.

Table 3.4 presents a summary of Scottish Water's tariffs.

Table 3.4: Summary of tariffs

	Type of tariffs			
	Fixed £ per annum	Fixed – based on rateable value (pence per £ of RV)	Volumetric (pence per m³)	
WATER				
Unmetered household	1			
Metered household	1		✓	
Unmetered non-household	1	1		
Metered non-household	✓		✓	
SEWERAGE				
Unmetered household				
Waste water (including foul and surface water drainage)	1			
Metered household				
Sewage	1		✓	
Surface water drainage	✓			
Unmetered non-household				
Sewage	✓	1		
Surface water drainage		1		
Metered non-household				
Sewage	✓		✓	
Surface water drainage		1		
Trade effluent	✓		√ ²⁰	

A definition of tariff baskets

A tariff basket includes all of the tariffs that impact on customers who receive a particular service. For example, if measured non-household water customers were considered as a group, all of the tariffs that impact on them would be included. Such a tariff basket would therefore include the standing charges relating to the different sizes of connection available and the volumetric tariffs. The balance of tariffs within the basket will be determined by the number and type of connections, amount consumed and by increases or decreases in the tariffs included in the basket.

Total revenue is determined by adding together the output of each tariff basket. The revenue from an individual tariff basket is assessed by calculating the sum product of the relevant customer base and relevant tariffs.

Table 3.5: The use of weighted average tariffs

	% increase (D)	% of total revenue (E)	Weighted % increase (D x E)
Tariff A	5%	50%	2.5% (A)
Tariff B	-5%	20%	-1% (B)
Tariff C	20%	30%	6% (C)
Weighted average (A+B+C)	-	-	7.5%

The weighted average increase provides a reasonable indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change. We scrutinise very carefully any material divergence in tariff changes within a basket.

Changes in the current balance of tariff baskets have been made to reflect the outcome of the Scottish Executive's consultation, 'Paying for water services 2006-10' and the Ministerial Guidance which we received in February 2005.

Our approach to tariff baskets

In England and Wales tariff baskets are defined in condition B of the companies' operating licences. Scottish Water's duties are set out in statute and there is no equivalent licensing regime in Scotland. We therefore describe our proposed tariff baskets in detail in Volume 7 of this Strategic Review of Charges 2006-10.

There are ten separate tariff basket items:

- household unmeasured water;
- household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water (20mm connection);
- measured water (25mm connection and above);
- measured waste water (20mm connection);
- measured waste water (25mm connection and above);

²⁰ Trade effluent is charged for using both volume and strength.

surface water drainage (excluding unmeasured household); and

trade effluent.

Treatment of large customers

Larger customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. Ofwat considers that pricing arrangements for larger customers could significantly distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate.

Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. We have therefore included large customers in the tariff basket.

Standard customers

In the Strategic Review of Charges 2002-06, we illustrated the effect of our recommendations with reference to a number of standard customers. We have developed our use of standard customers so that customers can better understand the likely impact of the review on the bill that they pay.

A customer's bill will vary depending on the relative use of the services provided. For example, the bill for a household customer with no meter will be based on the Council Tax band of the property, whereas charges for a business customer with a meter will be based on:

- the size of the water connection;
- the amount of water consumed;
- an assumed size of the waste water connection;
- the assumed amount of waste water discharged; and
- the rateable value of their property (for draining surface water from the property).

The customer's bill will be the sum product of the relevant factors and the appropriate tariffs.

Scottish Water has more than 120,000 non-household customers. These customers will each require a quite different mix of services from the water and sewerage undertaker, so the impact of tariff changes will impact on their total bills in different ways.

It is clearly important that our set of standard customers is representative of the actual customer base. This ensures that all customers can find a 'match' that will illustrate the likely impact of tariff changes on their bill.

Table 3.6 shows the standard customer descriptions that we used in the Strategic Review of Charges 2002-06. It also shows the new name for these customers for the Strategic Review of Charges 2006-10.

Table 3.6: Standard measured customers used at the 2002-06 & 2006-10 Reviews

Strategic Review of Charges 2002-06	Strategic Review of Charges 2006-10	Water			Sewerage	
		Meters (no x size (mm))	Volume (m³)	Meters (no x size (mm))	Volume (m ³)	Rateable value
Newsagent	Convenience store	1 x 20	30	1 x 20	28.5	£5,000
Garage	Garage	1 x 20	100	1 x 20	95	£10,000
Restaurant	Large restaurant	1 x 20	500	1 x 20	475	£100,000
Commercial	Large office	1 x 25	900	1 x 25	855	£750,000
Retail	Retail group	2 x 20 20 x 25 1 x 35	4,500	2 x 20 20 x 25 1 x 35	4,275	£1,700,000
Food manufacturer 1	Food manufacturer 1	2 x 25 1 x 80	50,000	2 x 25 1 x 80	47,500	£100,000
Food manufacturer 2	Food manufacturer 2	2 x 25 1 x 50 1 x 100	100,000	2 x 25 1 x 50 1 x 100	95,000	£260,000
Manufacturing	Large manufacturer	1 x 150	175,000	1 x 150	166,250	£1,225,000
Brewers	Brewers	2 x 25 1 x 100 1 x 150	600,000	2 x 25 1 x 100 1 x 150	150,000	£500,000

Unmeasured customers

Our 2001 set of standard customers did not include unmeasured customers who pay according to their rateable value. We have included four unmeasured non-household customers in our list of standard customers, as shown in Table 3.7.

Table 3.7: Additional standard unmeasured non-domestic customers

Customer name	Rateable value
Small newsagent /grocer	£200
Local hairdresser	£920
Sports club	£2,250
Supermarket	£30,000

Measured customers

Our review of the customer information provided by Scottish Water suggested that metered customers were reasonably well represented within the existing standard customers. We therefore added only four additional standard customers. The additions are outlined in Table 3.8.

Table 3.8: Additional standard metered customers

Name	Water			Sewerage		
	Meters (no x size (mm))	Volume (m³)	Meters (no x size (mm))	Volume (m³)	Rateable value	
Warehouse	1 x 20	10	1 x 20	9	£500	
Large house	1 x 20	110	1 x 20	104	Band H	
High School	1 x 25	2,000	1 x 25	1,900	£18,000	
Hotel	1 x 50	15,000	1 x 50	14,250	£75,000	

Standard trade effluent customers

It is more difficult to define standard trade effluent customers than it is to define water customers or customers who discharge standard-strength sewage. There are just over 2,000 customers in Scotland who have trade effluent agreements. They range from a small garage to a large petrochemical firm. The six additional standard customers are shown in Table 3.9.

Table 3.9: Additional standard trade effluent customers

Name	Volume		Lo	Load		Average strengths	
	Annual (m³)	Daily (m³)	Total suspended solids (kg/day)	Biological oxygen demand (kg/day)	Total suspended solids (mg/l)	Settled chemical oxygen demand (mg/l)	
Bakery	200	0.55	0.5	0.75	575	1,600	
Clothing manufacturer	12,000	32.9	1	1	20	300	
Abattoir	90,000	246.6	150	250	600	1,500	
Electronics business	550,000	1507	15	50	10	75	
Printers	10,000	27.4	5	40	100	2,500	
Distillery	150,000	411.0	7	55	15	200	

Method for setting retail and wholesale charges

The changes to the competition framework contained in the Water Services etc. (Scotland) Act 2005 allow new entrants to obtain a licence to provide retail services to non-household customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine the appropriate overall level of wholesale charges we first needed to define the wholesale and retail activities.

Defining the retail and wholesale activities

Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers. Retail is the selling of goods or services directly to consumers. Our view is that retail activities include all matters relating to:

- retail pricing and tariffs;
- the billing process;
- · collection of charges;
- · debt follow up and debt management;
- · meter reading and customer meter operations;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;

- key account management;
- liaison with the wholesaler to deal with customer issues;
- marketing;
- managing connection/disconnection process;
- scheduling septic tank emptying; and
- supporting wholesale emergency responses.

Scottish Water currently handles all aspects of the water and sewerage service. Its activities can be represented in a value chain. Retail is a relatively small part of what Scottish Water does.

Figure 3.5: Scottish Water's value chain



The Act requires Scottish Water to establish a retail subsidiary. Scottish Water would be required to treat that retail subsidiary no differently from any potential new entrant.

Possible approaches to setting wholesale prices

We considered four approaches to setting the overall level of wholesale charges:

the efficient component pricing rule;

- the long run marginal cost approach;
- accounting approaches; and
- comparator approaches.

We have used the accounting approach.

The accounting approach

We decided to use our regulatory accounts to define the accounting costs of the wholesale and retail businesses. These accounting costs include all:

- direct and indirect operating costs (indirect costs include items such as shared legal, IT, and head office functions);
- · direct and indirect capital expenditure; and
- financing costs.

The comparator approach

We have also attempted to analyse other network utility industries that have wholesale and retail activities to confirm our setting of charge caps. In both the gas and electricity industries there has been structural separation between the vertical components of the businesses. The monopoly elements of the businesses have been separated from those elements that are subject to competition.

Connection charging regime

Throughout the utility industry, issues have arisen in relation to the allocation of costs for new connections between existing and prospective customers. In Scotland, the mechanism for establishing how costs should be shared between existing and prospective customers is currently being redefined by the Scottish Executive through changes set out in the Water Environment and Water Services (Scotland) Act 2003.

For both existing and new customers, the allocation of the costs associated with new connections needs to be both equitable and transparent. This requires a careful assessment of the impact of connection charging regimes, particularly where network capacity is limited. For the water industry in Scotland, the impact of limitations of the network capacity on new development confirms the need for robust connection charging arrangements to be in place.

Scottish Water's current connection charging policy

For household customers, current legislation²¹ requires Scottish Water to provide a connection to the public network for either new or existing properties, where it is practical to do so at 'reasonable cost'. Scottish Water currently interprets reasonable cost for new households as being a maximum of £1,500 per property, split £1.000 for waste water and £500 for water.

In effect, the existing customer base funds the contribution towards the cost of connection. The process for establishing the level of the provision is not, however, transparent and appears to have evolved through custom and practice.

For non-household (industrial or commercial) customers there is no direct equivalent of the reasonable cost contribution. However, for waste water connections only, Scottish Water currently provides a connection allowance of £23,600 per hectare of land connected.

A number of issues have arisen in relation to Scottish Water's connection charging mechanism, including the following key concerns:

- The cost to customers of the 'reasonable cost' contribution. This is equivalent to almost 2% of a customer's bill.
- The reasoning behind the reasonable cost contribution. In particular, it is not clear why customers, including the vulnerable, should fund the installation of water and waste water services to new houses. This is not consistent with the approach taken in the electricity, gas and telephone industries.

²¹ The Sewerage (Scotland) Act 1968, The Water (Scotland) Act 1980 and the Water Environment and Water Services (Scotland) Act 2003.

 The impact of the connection charging policy on new development. This contribution would appear to increase demand that cannot realistically be met. Moreover, similar problems do not appear to exist to the same extent in other utility models where developers fund a larger proportion of the connection costs.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the Water Environment and Water Services (Scotland) Act 2003 by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. Consequently, these changes will have an impact on the period of the Strategic Review of Charges 2006-10.

The Scottish Executive is currently considering whether the introduction of an infrastructure charge (as is levied south of the border) is appropriate in Scotland. This could go some way to financing local network reinforcement work that cannot be attributed to specific development.

Chapter 4

The scope for operating cost efficiency

Introduction

The role of this Office, as economic regulator, is to set a regulatory framework that provides incentives to Scottish Water to achieve efficiencies and improve customer service.

In this chapter we explain:

- how the regulatory regime can create incentives to improve performance;
- how we have determined the level of operating costs that Scottish Water should be allowed to incur; and
- how best to ensure that customers receive an appropriate level of service.

Incentive-based regulation

Regulation seeks to limit the power of a natural monopoly and ensure that it acts in the customer interest. Regulation ensures that the monopoly:

- restrains charges, by setting charge or revenue limits; and
- delivers acceptable levels of customer service.

Providing incentives through regulation

We believe that price cap regulation (RPI-X) is the most applicable form of regulation to the current position of the water industry in Scotland. The RPI-X approach is widely used in the regulation of utilities in the UK. Using this approach in Scotland allows more direct comparison with the industry in England and Wales. This is important as it is through benchmarking the performance of Scottish Water with other water companies that we can determine the extent of efficiencies that are possible.

In the context of regulated utilities, incentive regulation has been defined as "the use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals²²."

In the case of the water industry, the "desired goals" would include:

- keeping charges to customers as low as possible;
- · meeting environmental and water quality objectives;
- delivering the required investment programme;
- maintaining the long-term sustainability of the industry; and
- meeting customer service targets.

As part of its 2004 price review²³, Ofwat listed the general criteria that it considered should apply for incentive mechanisms. Ofwat stated that the mechanism should:

- · be in the long-term interests of customers;
- offer meaningful and worthwhile rewards for genuine out-performance;
- offer adequate penalties for under-performance;
- provide timely rewards and penalties;
- · stimulate continuous improvements;
- be known in advance;
- be straightforward in concept;
- follow simple rules;
- be simple to apply; and
- avoid retrospective changes.

We believe that these criteria are as relevant to the public sector as to the private sector water industry. Our use of the RPI-X mechanism would seem to be consistent with these criteria.

²² Lewis, Tracy and Garmon, Chris 'Fundamentals of incentive regulation'. PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

Table 4.1: Criteria for an effective framework for incentives

Criteria	How well does RPI-X fit the criteria?
In long-term interests of customers	Good. It is widely agreed that RPI-X works well in incentivising firms to improve efficiency in operation and investment. There are risks that firms may seek to cut corners in service delivery, but proper scrutiny from regulators and customer committees should reduce this risk.
Meaningful and worthwhile rewards for genuine out-performance	Good. Regulated companies in the UK have improved their efficiency. This suggests that regulated firms believe the benefits to be worthwhile. The context of 'rewards' for a public sector company may be different.
Adequate penalties for under-performance	We are not aware of any evidence that shows that the penalties for under-performance are inadequate.
Timely rewards and penalties	Acceptable. A regulatory period of four to five years ensures that the incentive framework can reward (or penalise) managers who are responsible for out-performance (or underperformance). The period is not so long that there is an inordinate delay in transferring the benefit to customers.
Stimulate continuous improvements	Good. This can be further enhanced by implementing a rolling incentive mechanism.
Known in advance	Good. The targets for the regulatory period are set out in advance. The mechanism is well understood by all stakeholders.
Straightforward in concept	Good. The concept is relatively straightforward. Companies are motivated to meet and beat the targets set by the regulator.
Simple rules	Acceptable. In its initial form, simplicity was one of the merits of the framework. However, the rules have inevitably become increasingly complicated.
Simple to apply	Acceptable. No new information, which is not already collected either during the initial price setting or through ongoing monitoring, is required. The rules are well documented.
Avoid retrospective changes	The incentive framework relies on consistency and transparency. These are two of the Better Regulation Task Force Principles that we have adopted.

Some commentators have suggested that RPI-X promotes short-term planning by utilities instead of encouraging the long-term investment planning that could sustain efficiency improvements and would be more beneficial to customers. We agree that there is a risk that regulated companies are likely to maximise their short-term performance. It would be desirable to ensure that regulated companies planned for the long term. We consider that transparent and consistent regulation are likely to be at least as important as other potential regulatory actions. We have also adapted our approach to setting the allowed level of capital expenditure to reduce the risk of a short-term view being taken by Scottish Water.

Our view is that there needs to be a balance between short-term and long-term pressures. It is important to both customers and to the service provider that we are clear about the long-term prospects for prices. It is equally important, however, that there is a current pressure to deliver value for money to customers. On balance, we believe that RPI-X does work in the customer interest. If the regulator monitors service levels and asset condition and performance effectively, he can reduce the risk that a company seeks short-term benefits and stores up problems for the future. Regulatory consistency and transparency are essential, but so too is the strength of the regulatory framework. The regulated company must believe that the regulator can and will apply incentives or penalties.

Employee incentives

It is important that the benefits of any out-performance encouraged by RPI-X regulation are shared appropriately between the various stakeholders.

Our second open letter to Scottish Ministers explained our suggestion that if Scottish Water out-performed its regulatory contract there could be scope to reduce customers' charges before the end of a regulatory control period. We intend to comment on Scottish Water's performance in our three annual reports. Our view is that employee incentives should be closely tied to performance against the regulatory contract.

The detailed nature and scope of incentives for management and employees is clearly outside our remit. However, the potential benefits to customers of improved and sustained performance are important considerations for this Office. From a customer perspective, we believe that incentives should be designed to encourage exceptional performance. Management bonuses should also be seen to reflect improvements in the value for money that is achieved for customers. The best way of achieving this would be for customers' bills to be reduced to reflect better than expected performance.

This is not without precedent in quasi-public, regulated organisations. Two examples of other benefit sharing schemes indicate the scope of what is possible.

Glas Cymru²⁴: the remuneration of Glas Cymru's executive directors is designed in such a way that a high proportion of the maximum potential pay is linked

²⁴ Source: Interim statement of Glas Cymru policy for the remuneration of directors, Glas Cymru Cyfyngedig Annual Meeting (2001).

directly to company performance. Half of the maximum bonus is based on financial performance (measured by growth in financial reserves) and the other half is based on how well the company delivers services to customers.

Network Rail Limited²⁵: Network Rail's Management Incentive Plan (MIP) is designed to: "create the potential to reward outstanding performance based on individual contribution and the overall success of Network Rail in meeting the objectives of the Business Plan."²⁶

Setting the allowed level of operating costs

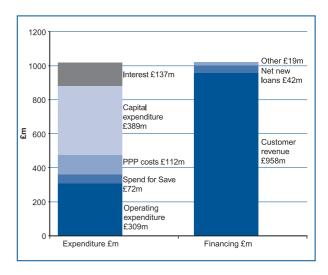
Operating expenditure comprises day-to-day running costs such as employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as a running cost.

We do not include the following in operating costs:

- · maintenance of the asset base;
- · depreciation;
- infrastructure renewals charge; and
- costs of Public Private Partnership schemes.

Operating expenditure accounts for some 30% of revenue. This is illustrated in Figure 4.1, which shows that in 2003-04, Scottish Water's operating expenditure was £309 million.

Figure 4.1: Scottish Water expenditure and funding 2003-04



We collect information about the operating costs incurred by the water and sewerage service undertakers in the UK using a consistent breakdown of operating expenditure. This facilitates comparisons with other water and sewerage companies.

Underlying operating expenditure

In order to ensure that our comparisons are objective and fair, we exclude one-off items of expenditure that can affect reported operating expenditure. Examples would include:

- the costs of abnormal pension contributions;
- redundancy payments;
- rates rebates; and
- unusual weather conditions.

Base service operating expenditure

The baseline level of operating expenditure is the expenditure incurred in the base year. We apply future efficiency targets to this baseline. We have used the following process to set the baseline level of operating costs for the draft determination:

²⁵ Source: Management Incentive Plan Statement – 2002-03, Network Rail Limited.

²⁶ Ibid.

- We used the 2003-04 statutory accounts and June Return information to establish the total level of Scottish Water's operating expenditure in that year.
- We identified exceptional and atypical costs and subtracted them from total operating expenditure.
 This allowed us to establish the normal ongoing costs of running the business.

Finally, we assessed whether there was anything unusual about Scottish Water's cost allocation in 2003-04. We compared Scottish Water with the companies in England and Wales to ensure that its cost allocation practices are consistent with those in England and Wales. If necessary, we made appropriate adjustments to Scottish Water's operating expenditure.

The new Water Industry Commission will publish the final determinations in November 2005. It will have information for 2004-05 at that stage, and will revise its assessment of the baseline using information for 2004-05.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in:

- environmental standards;
- drinking water standards;
- levels of service to customers; and
- the supply/demand balance.

Such new operating costs are added to the baseline that we described above.

We used the same criteria to assess the level of new operating costs as in the Strategic Review of Charges 2002-06. These are as follows:

 Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?

- Is Scottish Water required to provide this additional level of service, and for what reason?
- Has Scottish Water carried out a proper assessment of the proposed new operating expenditure, rather than relying on estimates from contractors/ manufacturers or on an arbitrary percentage of the capital cost?
- Has Scottish Water demonstrated management challenge and control over the proposed costs?
- Has Scottish Water compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?
- Do the alternative options include different mixes of operating expenditure and capital investment?
- Has Scottish Water quantified potential savings to baseline operating expenditure which arise from upgrading works or systems, and offset increases in new operating expenditure accordingly?

Like-for-like comparison

In order to make reliable like-for-like comparisons we need to understand the factors that can influence the level of costs incurred by the water and sewerage companies in the UK. These can typically be divided into those that are broadly controllable by management and those that are outside the control of management. These factors are called 'internal' and 'external' factors respectively.

It is possible to identify a number of external factors that affect the costs of the water and sewerage industry. They include the following:

- difficulty of operating environment (eg population density, topography, types of water source, etc);
- customer mix;
- customer requirements (resolving complaints, etc);

- environmental requirements (eg leakage levels, sewage effluent standards, etc);
- volumes (water consumption, peak use, sewage loads);
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

We can also identify a number of factors that are within the control of management. They include the following:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding purchasing and stocks of materials and consumables:
- the organisation's policy regarding hired and contracted services, for example the use of lawyers and consultants; and
- in the long term, the nature of the assets operated and maintained (size, mix, performance) – over time, water and sewerage service providers can change the assets they own and operate, either by building new ones, decommissioning old ones or making changes to existing assets to modify the way in which they operate.

Calculating relative efficiency

In order to make objective comparisons we need to take proper account of the external factors that influence the

level of costs of each company. We use two separate benchmarking models to allow us to assess the relative efficiency of the water and sewerage companies.

The models allow us to compare the actual costs incurred by a water and sewerage company with a predicted level of costs from our benchmarking models. The difference between the predicted and the actual level of costs is an indicator of the relative efficiency of the company. We adjust these results so that the average level of predicted costs is 100. The results for other companies have been adjusted in a similar way. Those with results which are lower than 100 are relatively efficient, while companies with scores higher than 100 are relatively inefficient.

Ofwat's methods of benchmarking

Ofwat uses econometric modelling to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics. Ofwat developed these models jointly with Professor Mark Stewart of Warwick Business School in the early 1990s. They have subsequently been updated and improved.

The Competition Commission concluded that this methodology was sound in August 2000, following a detailed review, and in January 2000 Ofwat's approach earned wide endorsement as an example of best practice from the Performance and Innovation Unit of the UK Government Cabinet Office.

In January 2004, Ofwat published a revised suite of models for comparing operating expenditure. The 2004 models have been re-estimated using 2002-03 information from the companies south of the border and have been used as part of Ofwat's 2004 price review. There are nine models for operating expenditure²⁷:

- water resources and treatment;
- water distribution;
- water power;

²⁷ There are eight econometric models for assessing capital maintenance efficiency, hence the 17 models referred to by the Performance and Innovation Unit in its report.

- water business activities;
- sewer network;
- large sewage treatment works;
- small sewage treatment works;
- sludge treatment and disposal; and
- sewerage business activities.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. The models themselves take different forms. These are summarised in Table 4.2.

Table 4.2: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter >300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

We explain our use of the Ofwat econometric models in Chapter 8 of Volume 6 of this draft determination. We also describe modified Ofwat models in Chapter 9. We have reworked these models to include information on Scottish Water's assets, customer base and costs.

The alternative model

At the time of the last Review we developed an alternative model to assess the efficiency of the water industry in Scotland. This model was used to check the results of the Ofwat econometric models. We were aware that the Competition Commission had concluded that, although the Ofwat econometric models were robust, alternative models could have a place in efficiency analysis.

In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models so that the alternative model could provide an independent check on the results given by Ofwat's models.

The alternative model splits the water and sewerage business into ten different activities:

- water abstraction and treatment:
- water distribution;
- business activities (water);
- bad debt (water);
- sewage collection;
- simple sewage treatment;
- complex sewage treatment;
- processing sludge;
- business activities (sewerage); and
- bad debt (sewerage).

For each of these activities, we determine the principal factors that would affect comparisons of operating costs between Scottish Water and the water and sewerage companies in England and Wales.

We identified appropriate drivers for the costs that cannot be controlled by management. Tables 4.3 and 4.4 set out the cost drivers (for water and sewerage respectively) that we identified for each activity.

Table 4.3: Alternative model: cost drivers by activity for the water service

	Cost drivers used in the model,	associated with each ad	ctivity		
Activity	Assets operated	Asset attribute	Customers served	Volume	Other
	Impounding reservoirs and lochs	Number and average	-	Annual distribution	Average pumping
treatment	Burns and springs	size of each asset type		input ²⁸	head ²⁹ in abstraction and treatment
	River abstractions				
	Boreholes				
	Water treatment works				
Distribution	Water mains	Length of network	Resident connected population	Annual distribution	Average pumping head in the distribution system
	Water pumping stations	Number and average		input	
	Service reservoirs and towers	size of each asset type			
Business activities	-		Number of billed water customers – household (unmeasured, metered) non-household (unmeasured, metered)		Annual number of water samples taken
Bad debt					Annual revenue billed

Table 4.4: Alternative model: cost drivers by activity for the sewerage service

	Cost drivers used in the mod	Cost drivers used in the model, associated with each activity						
Activity	Assets operated	Asset attribute	Customers served	Volume	Other			
Sewage collection	Sewers	Length of network	Resident connected population	Volume per head	Size of area served			
	Pumping stations	Number and average size						
	Storm overflows	Number						
Simple sewage treatment	Sea outcrops – unscreened – screened	Number and average size		Load ³⁰ treated				
	Preliminary treatment works							
	Primary treatment works							
	Public septic tanks	Number						
Complex sewage treatment	Secondary treatment works – using activated sludge process – using biological process	Number and average size		Load treated				
	Tertiary treatment works – using activated sludge process – using biological process							
Processing sludge				Tonnes disposed (dry weight)	Disposal route (landfill, farmland, incineration, other)			
Business activities			Number of billed sewerage customers – household (unmeasured, metered) – non-household (unmeasured, metered)		Number of sewage samples taken			
Bad debt					Annual revenue bille			

We used information from Scottish Water and the water and sewerage companies about each of these cost drivers. The model also takes account of economies of scale. We do this by calculating the number of 'standard assets' that each company has. The standard assets take account of the size and operating costs of the companies' assets.

²⁸ Distribution input is the volume of water put into supply (including all leakage).

²⁹ Average pumping head is the average lift through pumping of water put into supply. Pumping takes place as part of the abstraction and treatment processes, and within the distribution system, where treated water is provided to customers.

³⁰ Sewage load is a measure of the amount of treatment that is required to make sewage safe for the environment.

The purpose of making adjustments to reported costs

It was important for us to consider the results of the Ofwat, modified Ofwat, and the alternative modelling approaches very carefully. Our models cannot take account of all of the external factors that influence cost. These factors may either increase or decrease the level of cost.

We needed to take account of all of these differences. For that reason, we asked Scottish Water to draw to our attention all factors (those not included in the models) that influence cost. This should include factors that both increase and decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. In particular, they question the application of Ofwat's econometric models in Scotland³¹. We believe that the fact that the Ofwat models have been successfully applied to companies as different as Thames³² and South West Water³³, and to both large water and sewerage companies³⁴ and small water only companies³⁵, confirms that the models can reasonably be applied in Scotland. While we needed to take into account some special factors this did not invalidate the modelling process.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (its size, remote islands, long coastline and topography);
- its population settlement patterns (remote communities, concentrated dense urban areas);
- the extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);

- the quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps);
- the nature of the customer base;
- the fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- the short time that Scottish Water has had to mature and improve.

We first made what we believe were appropriate adjustments to the results of the models. To justify any further adjustments, we asked Scottish Water to provide evidence in the following areas to which we have had regard:³⁶

- What is the justification for the special circumstances which demonstrates a material difference from industry norms? Scottish Water was required to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs, over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against upward cost pressures?

³¹ See, for example, J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004.

³² Thames Water covers the London area.

³³ South West Water covers Devon and Cornwall.

Thames Water has some 12 million customers.

³⁵ For example, Bournemouth & West Hampshire Water which covers just the water service for the Bournemouth area.

These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998.

Assessing the size of the efficiency gap

The term 'efficiency gap' refers to the difference between Scottish Water's actual reported operating costs and the costs reported by the comparator companies for providing a similar level of service. We had to distinguish between the efficiency gap that exists today and the gap that could exist in the future, as the companies in England and Wales are likely to continue to improve.

The efficiency gap is the difference between Scottish Water's actual costs and its adjusted predicted level of costs. We convert these differences to a relative scale in order to be able to complete the benchmarking. We call this the efficiency score. An example is presented in Table 4.5 below.

Table 4.5: Example illustrating how the efficiency score is calculated

	Adjusted observed	Predicted	Adjusted residual		Efficiency score
	£m	£m	£m	%	333.0
A water & sewerage company	200.00	155.00	45.00	29.03%	129.03

In this example, a company has reported operating costs of £200 million, after adjustments. The econometric models predict costs of £155 million for this company. It is therefore relatively inefficient. We first calculate the residual in percentage terms:

100% x 45/155 = 29.03%

The last step in the comparison process is to rebase efficiency scores such that the average efficiency score of companies south of the border is 100. This simplifies the presentation of a company's score.

Assessing the future efficiency gap

The efficiency of the comparator companies in England and Wales continues to improve. We have taken account of the way in which the performance of the companies south of the border is likely to change over the next regulatory control period. Otherwise customers in Scotland may have to pay more than is necessary.

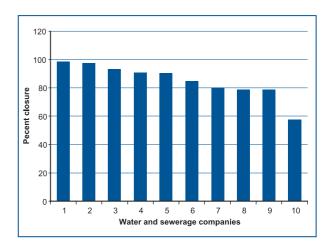
Ofwat published final targets and incentives in November 2004. This has informed our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We have set an allowed level of operating cost that takes account of the improvements that Ofwat has required the companies south of the border to achieve.

Rate of improvement in efficiency

The final important area that we consider relates to the rate of improvement that we can expect from Scottish Water. In the Strategic Review of Charges 2002-06 we examined evidence from England and Wales about the rate of progress achieved by companies during the 1990s. We assumed that Scottish Water should be able to match the pace of change achieved south of the border.

Our analysis demonstrated that during their best fiveyear period, the companies achieved an average closure of 85% of the gap to the leading company. Figure 4.2 is taken from the Strategic Review of Charges 2002-06.

Figure 4.2: Closure of efficiency gap by water and sewerage companies over five years



We have conducted similar analyses to establish the rate at which Scottish Water should be required to improve during the 2006-10 regulatory control period. We have also looked at the performance that Ofwat has required the companies south of the border to achieve.

Calculating total allowable operating expenditure

We have set targets in terms of total allowable operating expenditure (not including depreciation). We have set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory period. This is the amount that will be funded through customer charges. Figure 4.3 sets out the calculation.

Figure 4.3: Calculation of total allowable operating expenditure

Total allowable operating expenditure

Baseline operating expenditure

Assessed changes in baseline operating expenditure

Efficiencies in baseline operating expenditure

New operating expenditure

Efficiencies in new operating expenditure

Public Private Partnership operating expenditure

New Public Private Partnership operating expenditure

The impact of annual inflation on all of these components

We will no longer refer to a monetary value for the total efficiencies required. However, if stakeholders want to count the total monetary value of the efficiencies required in this regulatory control period, they should add:

- efficiencies in baseline operating expenditure; and
- efficiencies in new operating expenditure.

Then adjust for annual inflation.

This figure should be comparable to the targets set in the Strategic Review of Charges 2002-06.

Public Private Partnerships

The three former authorities decided to let a total of nine concessions for the building and operation of waste water treatment plants. These concessions were for a period of 25-30 years.

The concessions were let to joint venture companies which usually consisted of a consultant engineering and design firm, a construction contractor and an operations company. The companies had to accept responsibility for maintenance over the contract period and for the inherent risks of project delays, cost overruns and volume changes caused by shifts in demand. They were also required to deliver the service within tightly specified parameters. An essential element of PPP is the transfer of risk from the public to the private sector.

The results of the nine projects would appear to have realised considerable tangible benefits in the short term. It is open to question whether these benefits still apply.

Guidance from HM Treasury makes it clear that the benefits of reductions in the cost of capital should be shared between the contractor and the public sector partner.

The nine PPP contracts represent a capital investment on behalf of customers of around £550 million, which contrasted with an estimated investment of more than £700 million under the conventional procurement route.

The contracted solutions for the collection, transmission and treatment of waste water and its resultant sludge are tailored to each project's particular location. The annual fees are therefore only comparable on an aggregate basis if the actual service delivered and the construction of assets are taken into account.

The nine projects are outlined in Table 4.6. The table also shows the projected fee payable to each consortium.

Table 4.6: PPP contracts with Scottish Water

Project name: company name	Contract signed	Duration (years)	Construction costs (£m)	Annual fee in 2002-03
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£25m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£5m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£9m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£17m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£8m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£16m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m

The impact of PPP on customers

We analysed the value for money of the PPP contracts in 2001. The evidence suggested that these schemes were all delivered at a much lower cost for customers than would have been achieved by the three authorities under traditional procurement.

In the Strategic Review of Charges 2002-06 we highlighted that there may be opportunities for Scottish Water to review the PPP contracts that it inherited. It seems clear that the implied operating costs of the PPP consortia are high relative to the expected level of operating costs associated with a waste water treatment plant of similar size. There would therefore appear to be some scope for improved efficiency. Moreover, the recent and continuing significant improvement in Scottish Water's operating expenditure efficiency would suggest that it is now quite likely that Scottish Water could operate these plants at equal or lower cost than the prices charged by the PPP companies.

We considered setting an efficiency target for PPP. Respondents to our methodology consultation did not consider that this was appropriate. However, one respondent did suggest that we should monitor costs carefully to ensure that the contractors were delivering the required level of service. Any future increase in PPP costs have had to be justified in detail.

Another respondent reminded us that PPP may represent the most practical or best value method of delivering the required output. We have taken this view into account in this draft determination.

Levels of service

Monitoring the levels of service

We monitor three broad aspects of service:

- · asset performance measures;
- customer service measures; and
- public health and environmental performance measures.

Asset performance measures cover areas of service that depend on the water supply and sewerage infrastructure. They cover:

- pressure;
- planned supply interruptions;
- unplanned supply interruptions; and
- sewer flooding.

Customer service measures cover areas of service that depend on the management and employees of the organisation and the processes they use. Customer service measures cover:

- billing enquiries;
- written complaints;

- telephone contacts; and
- public health and environmental performance measures.

Public health and environmental performance measures cover areas of service that relate to the service provider's ability to comply with the requirements for quality standards. These standards are set by the respective quality regulators, DWQR³⁷ and SEPA³⁸. These measures include:

- meeting drinking water quality standards;
- complying with abstraction consents for rivers;
- complying with discharge consents at waste water treatment works; and
- the number of pollution incidents.

There are also a number of Guaranteed Minimum Standards. Failure to comply with any of the guaranteed standards entitles the customer to financial compensation.

The approach for Scottish Water

We have developed our use of the benchmarking approach for quality of service regulation.

Our analysis of the scope for efficiency has not been adjusted to take account of differences in the level of service. We have set clear milestones for the customer service performance of Scottish Water. If Scottish Water does not meet these standards we would be minded to adjust the allowed level of future operating costs downwards at the next charge determination to reflect the lower level of service provided.

Monitoring operating expenditure and levels of service

Framework for monitoring

The Strategic Review of Charges 2006-10 is only the start of the regulatory process. During the regulatory

control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance, through:

- regular information submissions, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- independent audit of regulatory information;
- a process of query, challenge and confirmation of numbers;
- rigorous analysis of current and expected progress against targets;
- · published reports; and
- the application of analytical tools which are designed to ensure that we can monitor real progress as opposed to apparent progress (for example, improvements that are due to the information for the Annual Return being calculated in a different way).

We also monitor Scottish Water's progress relative to that of the companies in England and Wales. We continue to use information from the companies south of the border. This information includes:

- companies' Annual Returns to Ofwat;
- comments on these returns by independent auditors, published by Ofwat;
- companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress;
 and
- rigorous analysis of relative efficiency using our benchmarking tools.

Monitoring operating expenditure

Our monitoring covers the following:

baseline operating expenditure;

³⁷ DWQR – Drinking Water Quality Regulator – www.DWQR.org.uk

³⁸ SEPA – Scottish Environment Protection Agency – www.SEPA.org.uk

- new operating expenditure;
- Public Private Partnership operating expenditure;
- year-on-year progress on each of the above against targets; and
- progress on baseline and new operating expenditure, relative to England and Wales.

Table 4.7 sets out our framework for monitoring progress on operating expenditure.

Table 4.7: Framework for monitoring progress on operating expenditure

Sources of information	Opera	Operating expenditure			
	Baseline	New	PPP	Baseline and new ³⁹	
Scottish Water					
Annual Return	1	1	1	1	
Regulatory accounts (from 2005)	1	1	1	✓	
Monthly operating expenditure returns	1				
Quarterly investment returns ⁴⁰		1		1	
Independent comments by Scottish Water's Reporter	1	1	1	✓	
England and Wales					
Companies' annual returns				1	
Company regulatory accounts				✓	
Independent comments by Reporters in England and Wales				/	
Ofwat's published annual reports				√	
Reporting progress	₩				
		Costs & per	formance re	eports	

Monitoring levels of service

We monitor the level of Scottish Water's customer service performance by using the overall performance assessment (OPA) that Ofwat has developed. We will monitor improvements in customer service relative to the OPA.

The OPA combines results for customer service measures with other information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service.

Our framework for monitoring performance focuses primarily on the levels of service measures that comprise the OPA. We also monitor performance against Scottish Water's Guaranteed Minimum Standards.

Table 4.8 sets out our framework for monitoring levels of service performance.

Table 4.8: Framework for monitoring levels of service performance

Sources of information	Guaranteed Minimum Standards	Overall performance assessment	
Scottish Water			
Annual Return	✓	✓	
Customer Service Performance Return	✓	√	
Quality Performance Assessments	✓		
Independent comments by Scottish Water's Reporter	✓	1	
England and Wales			
Companies' annual returns		✓	
Independent comments by Reporters in England and Wales		√	
Reporting progress	•	ı	
	Customer service reports		

Conclusion

We believe that our framework for monitoring Scottish Water's performance is robust. The introduction of regulatory accounts in 2005 has further strengthened this framework.

We will continue to publish reports on progress made by Scottish Water, in order to inform stakeholders and encourage discussion and debate. These reports will pay particular attention to changes in the level of service that is provided to customers. They will also examine whether such changes are consistent with any new operating costs claimed by Scottish Water.

³⁹ Comparisons of relative performance exclude PPPs as there is no direct parallel in the water and sewerage industry in England and Wales.

⁴⁰ We use the quarterly investment returns to help monitor new operating expenditure because this expenditure is driven largely by Scottish Water's capital investment.

Chapter 5

The scope for capital expenditure efficiency

Introduction

This chapter describes how we have set the level of expenditure allowed to Scottish Water to meet the investment priorities outlined in the Ministerial Guidance at the Strategic Review of Charges 2006-10.

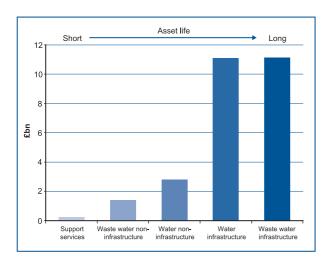
Capital expenditure in the Scottish water and waste water industry

The assets required to deliver a water and waste water service can be divided into five broad types:

- water infrastructure;
- water non-infrastructure:
- waste water infrastructure;
- waste water non-infrastructure; and
- support services.

Figure 5.1 illustrates the replacement cost and expected life of Scottish Water's assets.

Figure 5.1: Replacement cost and asset life by type of asset⁴¹



Scottish Water is responsible for a larger geographic area than any of the water and waste water companies in England and Wales. However, the asset bases either side of the border appear to have many similarities.

Table 5.1: Comparison of the asset base

	Scottish Water	Ranking	Water and waste water companies in England and Wales		
			Smallest	Mean	Largest
Length of water mains (km)	46,508	1st	11,226	27,706	45,674
Length of main per property (m)	18.74	5th	9.07	15.94	21.10
Length of sewers (km)*	44,854	3rd	8,820	30,573	67,151
Length of sewer per property (m)*	13.34	7th	11.93	13.68	14.85
Number of water treatment works	371	1st	33	102	154
Number of waste water treatment works**	616	4th	349	630	1,071

^{*} Excludes lateral sewers as they are not part of the sewer network in England and Wales.

Historic investment in Scotland

Investment in the water industry in Scotland began to increase significantly after the three former water authorities were established in 1996. This was delivered both by conventional procurement and by PFI.

The level of investment in England and Wales increased significantly after privatisation in 1989. By 1996-97, the privatised companies were investing some £3.5 billion per year.

Investment in England and Wales has recently stabilised at around £3 billion a year. The Strategic Review of Charges 2002-06 foresaw investment in Scotland stabilising at an average level of around £450 million each year.

We can compare the level of investment in Scotland with that in England and Wales using the measure of investment per property. Information about investment in Scotland is available for the years before 1996 from the capital account of local authority returns. This may actually understate the level of investment in Scotland as it will exclude any spending on assets from the revenue account.

This is illustrated in Table 5.1. The high proportion of the Scottish population that lives in the Central Belt and coastal communities may explain the possibly unexpected result.

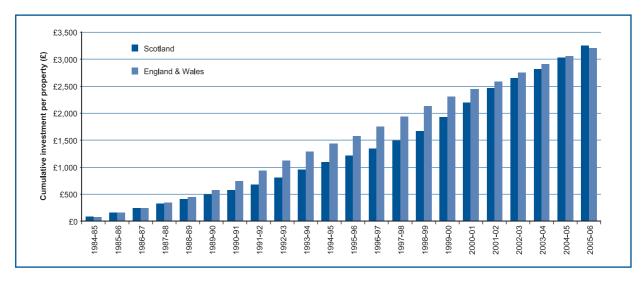
^{**} Excludes 1,220 very small public septic tank installations, which are uncommon in England and Wales.

⁴¹ Scottish Water's Annual Return 2003-04.

Our analysis shows that investment per connected property in Scotland will have matched that in England and Wales over the period 1985-2006. Although investment in England and Wales was higher immediately after privatisation, the situation has reversed in recent years as figure 5.2 shows.

By the end of Quality and Standards II, the Scottish water industry is set to have invested more in cash terms for each connected property than was invested in England and Wales over a ten-year and a 20-year period.

Figure 5.2: Cumulative investment per property in Scotland and in England and Wales 1984 -2006⁴²



The conclusion from this analysis, therefore, is that if there is a significant backlog of investment in Scotland relative to that in England and Wales, it can only be a result of historical inefficiency, not a lack of investment funds. We are not persuaded by Scottish Water's argument that the percentage of the total asset base that has been replaced in England and Wales over the same period is much greater than in Scotland. To be useful, such a comparison would rely on both a robust asset inventory and asset valuation. Scottish Water has accepted that more work is required in this area. Customers in Scotland have paid for, and so deserve, an equivalent standard of service to that which customers in England and Wales receive.

Potential overhang from Quality and Standards II

We expect that over £270 million of the Quality and Standards II investment programme will not have been delivered by April 2006. The post-efficiency value of the programme is £1,808 million. Capital investment inflation is likely to increase the efficient cost of delivering this investment programme to approximately £1.93 billion. Scottish Water was also allowed to spend £50 million of capital expenditure on spend to save initiatives. Scottish Water has also been tasked with delivering a further £110 million of new outputs. This brings the total efficient cost of the investment programme for the current regulatory control period to approximately £2.04 billion.

⁴² Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

According to its second draft business plan, Scottish Water expects to invest a total of £1,941 million by the end of March 2006. The plan also states that some £283 million will have to be invested after March 2006 in order to deliver the Quality and Standards II objectives.

We have accepted Scottish Water's estimate of the overhang, although we have removed the claim for extra capital inflation beyond the current regulatory control period. Our analysis has shown that Scottish Water will deliver £274 million of the Quality and Standards II investment programme after March 2006. Accordingly, we have adjusted the initial RCV down to reflect the remaining outputs.

We will continue to monitor all of the projects in the WIC18 baseline until we are satisfied that Quality and Standards II has been delivered. The Reporter will have an important role in confirming that the full investment programme has been delivered.

Investment programme deliverability

Our analysis suggests that there is a limit to the size of a capital programme that can be delivered efficiently. We have examined the capital programmes delivered south of the border and the improvement in capital efficiency that has been achieved in the past few years. We believe that there is a risk that having a capital programme that is too large could adversely impact on efficiency.

The Quality and Standards II investment programme was approximately £1.943 billion over four years. This total investment is equivalent to £833 per household in Scotland.

Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger; Anglian Water and Yorkshire Water are similar in size to Scottish Water.

Table 5.2 compares the size of programmes delivered or defined by the companies with the Quality and Standards II programme.

Table 5.2: Summary of relative size of Quality and Standards II44

	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
Thames	£2,200m	£2,012m	£543
Severn Trent	£2,773m	£2,130m	£856
United Utilities	£2,554m	£2,223m	£861
Anglian	£1,856m	£1,587m	£954
Yorkshire	£1,727m	£1,367m	£854
Quality and Standards II	£1,930m ⁴⁵	-	£833

This shows that Quality and Standards II was a very large investment programme. It was larger than the largest programme ever delivered by Anglian Water and Yorkshire Water (the two companies of similar size to Scottish Water). It is also large in terms of investment per connected property.

In its second draft business plan. Scottish Water has suggested that it can deliver a capital programme of just under £600 million a year (2003-04 prices) without compromising its efficiency. We have taken full account of this view in this draft determination of charges.

How Ofwat assesses capital expenditure efficiency

The methods that Ofwat uses to assess capital expenditure efficiency for the companies south of the border have been developed over a number of years. Ofwat uses these methods as part of its price setting process. We have used Ofwat's methods to monitor Scottish Water's progress towards achieving the efficiency targets set in the Strategic Review of Charges 2002-06.

Capital maintenance econometrics

Ofwat's econometric modelling uses statistical regression analysis to establish a relationship between the costs incurred by companies and a defined set of cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By controlling the principal external cost

The original £1.81 billion investment programme included in the Strategic Review of Charges 2002-06 increases to £1.93 billion as a result of higher than expected capital outputs inflation.

All values rebased to 2003-04 prices

See footnote 43

drivers in the models, Ofwat can determine relative efficiency with a degree of accuracy.

The cost drivers that are included within the econometric models are known as 'explanatory factors'. There are nine models and they take different forms. These are summarised in Table 5.3.

Table 5.3: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Unit cost	Total connected properties
Water distribution infrastructure	Log linear	Length of main; total connected properties
Water distribution non-infrastructure	Log linear	Pumping station capacity; water service reservoir and storage tower capacity
Water management and general	Log linear	Billed properties; proportion of billed properties that are non-household
Sewerage infrastructure	Log linear	Length of sewer; number of combined sewer overflows; proportion of critical sewers
Sewerage non-infrastructure	Unit cost	Number of pumping stations
Sewage treatment	Log linear	Total load; total number of works
Sludge treatment and disposal	Unit cost	Total weight of dry solids
Sewerage management and general	Unit cost	Billed properties

We have used these models to assess the level of capital maintenance for Scottish Water. Using these models enables us to ensure that we have allowed an appropriate level of capital maintenance which should ensure that customers receive value for money both in the short and in the longer term.

Capital works unit costs

We have used the Ofwat capital works unit costs, or 'cost base', approach to assess the relative efficiency of Scottish Water in procuring and implementing capital projects. Ofwat uses this technique to inform its assessment of relative efficiency for both capital maintenance and capital enhancement expenditure.

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. We have compared the standard costs

submitted by Scottish Water and the companies south of the border to assess relative procurement efficiency.

The cost base approach to assessing relative efficiency has been subject to detailed scrutiny by the Monopolies and Mergers Commission and by the Competition Commission. Both found the approach to be fit for purpose. Capital maintenance econometrics are something different.

Ofwat reviews the submissions received from the companies in order to:

- ensure that the standard costs which are submitted comply with the specifications and guidance;
- ensure that the engineering judgement grades (EJG)⁴⁶ have been correctly applied and interpreted;
- confirm that companies have derived their standard cost estimates independently;
- subject all submissions to an independent audit; and
- ensure comparability between companies.

Ofwat uses the lowest reported cost as the benchmark standard cost, provided it complies with the following criteria:

- the standard cost used to derive the benchmark closely complied with the standard cost specification;
- at least 3% of the industry (measured in terms of turnover) reported unit costs at or below the benchmark standard cost;
- the standard cost was sufficiently robust to warrant an EJG of B3 or better;
- single company standard costs were generally used to derive the benchmark for items commonly procured from a single source over a range of sizes; and

⁴⁶ EJG – comprise two elements: 1. Reliability band (denoted by letter A-E) related to main source of data used in standard cost estimation 2. Accuracy band (denoted by nos. 1-4) related to the accuracy of the company's standard cost estimate compared to the actual cost the company would incur in undertaking the works as specified.

 the relevant benchmark is independently endorsed by consultants to Ofwat.

Adjusting the Ofwat approach for Scotland

There may be factors that influence investment costs which are not adequately reflected in the analysis techniques that we have described above. We asked Scottish Water, as part of its business plan submissions, to draw to our attention all factors that influence cost. This included factors that would both increase and decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales.

We assessed special factors for capital expenditure in the same way as we assess special factors for operating expenditure. We considered these and other factors carefully before reaching our conclusions on the scope for capital efficiency.

Lessons learnt from establishing the baseline investment programme for Quality and Standards II

One of the disappointments of Quality and Standards II has been the difficulties faced by both stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme.

Quality and Standards II defined the investment programme for the period April 2002 to March 2006. In May 2001 we wrote our WIC18 letter to the three authorities. This letter sought to establish a baseline for the investment programme of each authority.

We did not envisage that the authorities would find it difficult to provide the information we required, as they had already provided detailed costs for Quality and Standards II. North of Scotland Water Authority and West of Scotland Water Authority were able to provide a relatively detailed investment programme. East of Scotland Water Authority, however, failed to provide the required level of detail. When Scottish Water was created in April 2002, this problem had still not been properly addressed.

A number of workshops were held in March 2003 where the key stakeholders examined the WIC18 programme lists, line by line, and allocated projects into two distinct categories. The 'red' category meant that the project was no longer required and was hence a candidate for replacement with an alternative project; while the 'green' category was for WIC18 projects that were still required.

The WIC18 experience has taught us that a fully defined capital investment programme must be in place at the outset of the next regulatory control period. Our discussions with SEPA and the DWQR have also led us to conclude that the outputs to be delivered by each project must be clearly defined and quantified.

The baseline investment programme for Quality and Standards III is published in full with this draft determination. We hope that publishing the investment programme will help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

Defining the investment programme

Our requirement for a clear and detailed baseline for the Quality and Standards III investment plan is broadly consistent with those that are required by Ofwat for the companies south of the border.

The baseline is a key part of the regulatory contract between Scottish Water and its customers.

The plan can be split into three main elements:

- capital maintenance;
- quality; and
- supply/demand.

We have required a detailed list of all of the quality projects and supply/demand projects. The detailed list was to include all capital maintenance projects that have a value of more than £250,000.

Each investment project was to have:

- a unique code;
- a unique name;
- a geographical reference (place name and water supply zone/drainage area); and
- a defined output.

All capital maintenance projects were to identify clearly:

- the work proposed (its size, quantity and type);
- whether the project is planned or reactive;
- · the cost; and
- an appropriate output measure.

The timetable for the delivery of projects was to include:

- annual projected investment spend for each project
 this had to include any expenditure either before or after the regulatory control period;
- identification of key project milestones (for example when planning consent is granted); and
- the project's expected completion date.

We have required identical information for any overhang from Quality and Standards II.

Scottish Water's second draft business plan did not provide the required level of detail for us to monitor

Scottish Water's performance during the regulatory period in 2006-10. Following the submission of additional information by Scottish Water there was sufficient information for us to analyse the proper scope and cost of meeting the Ministers' objectives. We have endeavoured to ensure that the programme is properly defined but there will be a need to do further work in this area after the publication of this draft determination.

Investment programme review

All regulators review the draft investment programmes that regulated companies provide. We have worked closely with the Reporter, SEPA and the DWQR to review the investment programme proposed by Scottish Water.

The Reporter's assessment of Scottish Water's quality investment proposals formed a key part of our analysis. We provided detailed guidance to the Reporter on the particular areas we wanted his audit of the quality programme to address. These included an assessment of:

- whether Scottish Water had provided a consistent interpretation of legal obligations and the Ministerial Guidance;
- whether Scottish Water had included all of the agreed requirements of the quality regulators – we have also asked the Reporter to comment on Scottish Water's challenge of quality obligations placed on it by the quality regulators as part of Quality and Standards III;
- how Scottish Water has interpreted the Water Framework Directive and other key legislation which impact significantly on costs;
- the design criteria used by Scottish Water and whether these are consistent with the criteria used to develop the standards;
- · Scottish Water's costing process;
- whether the additional operating costs identified from the quality programme are additional, reasonable and have been applied consistently;

- whether Scottish Water has costed the quality programme in an incremental way, taking full account of any optimisation and synergy benefits; and
- cost estimates for defined projects.

We also asked the Reporter to comment on Scottish Water's use of information from DMAs⁴⁷ and Drainage Area Studies in planning and scoping its investment programme.

In the light of the Reporter's comments we also drew on the expertise of two separate engineering consultants and Ofwat in conducting a detailed review of the investment plan. This review focused on areas where the Reporter's audit identified issues. This is a first important step in ensuring that the proposed programme meets the requirements of stakeholders and provides value for money for customers. It ensures that the scope of the proposals is appropriate to achieve the objectives set out by Ministers, and that the proposed expenditure is being effectively targeted.

It has been important to establish that the programme would deliver the agreed outputs effectively. We had to be sure that our efficiency analysis was appropriate and consistent with our goal of improving value for money to customers.

We have used the following criteria in our review of the investment programme:

- Was the programme sufficiently defined to allow customers and stakeholders to monitor delivery? In particular, did it meet the level of definition set out in our guidelines?
- If delivered in full, did the proposed programme meet the objectives set out in the Ministerial Guidance?
 If not, what were the omissions? If so, did it exceed the requirements? In particular, did the quality regulators, SEPA and DWQR, agree that the relevant quality objectives could be met by the proposed investment?
- Were there projects in the programme which do not contribute to the required objectives?

- Were there errors in the programme; for example, in the identification of projects and the associated outputs?
- Was the programme properly costed?
- Were the solutions proposed by Scottish Water appropriate?
- Did they represent best practice?
- Were the proposed solutions supported by the DWQR and SEPA?
- Had the projects in the programme been allocated measurable, defined outputs?
- Did the projects have clearly defined delivery dates?
- Were the delivery dates realistic, both in terms of individual project construction times and the overall capacity of the industry to deliver the programme efficiently?

The output from the review is an estimate of the pre-efficiency cost of the investment programme required to deliver the Ministers' objectives.

How we handled capital maintenance investment

It can be difficult to determine the correct level of expenditure on capital maintenance. Too much investment is likely to result in assets being replaced unnecessarily, leading to higher prices and little benefit for customers. Too little investment is likely to mean a gradual decline in performance and customer service.

Approach to capital maintenance in Quality and Standards II

During the Quality and Standards II process, an 'asset stewardship' approach was used to define the appropriate level of capital maintenance. This approach used three key parameters to identify the required level of capital maintenance:

⁴⁷ District Metered Areas.

- condition;
- performance; and
- age.

Although the asset stewardship approach provides a reasonably sound engineering assessment of the state of the asset base, the approach had a number of weaknesses. Most notably:

- the gradings assigned for condition and performance were subjective and the approach to grading may have varied between companies;
- the information which underpinned the gradings and the assessment of remaining life may have been of varying age and quality;
- there was no assessment of the level of service that the asset provided to customers; and
- there was no assessment of the risks associated with failure of the asset.

In addition, the approach tended to overestimate the requirement for capital maintenance. This was because it overlooked the operator's capacity to:

- rationalise the assets (by assessing whether or not it is still required);
- adopt strategic solutions, by reorganising the network in order to reduce or remove the asset;
- use new technology; and
- implement cost-effective operational solutions to defer replacement.

At the last Strategic Review of Charges, we accepted the capital maintenance requirement identified in Quality and Standards II but we applied an efficiency target to reflect the scope for strategic asset management efficiency.

The serviceability approach

In its 1994 and 1999 price reviews, Ofwat used a serviceability approach when assessing whether the level of capital maintenance investment by the companies was appropriate. This involved monitoring a set of defined asset and customer service performance indicators for each company. If these indicators were broadly constant, or marginally improving, then it was assumed that the historic level of capital maintenance spend was about right. If the indicators showed a decline in performance, this indicated that the company had historically been investing too little in capital maintenance.

At the last Strategic Review of Charges we were not able to use the serviceability approach because at that time we did not have sufficiently good quality information about asset performance and customer service levels.

The companies in England and Wales felt that the serviceability approach did not take sufficient account of the risk of asset failure in the future. Ofwat proposed a collaborative approach to addressing these concerns. The industry commissioned UK Water Industry Research (UKWIR) to devise a more strategic, 'top-down' approach to assessing capital maintenance. The result was the 'Common framework for capital maintenance planning'.

Ofwat set out a four-stage approach – consistent with the UKWIR Common Framework Approach – to assess the companies' capital maintenance requirements in the 2005-10 regulatory control period. The four stages are as follows:

Stage A Maintaining serviceability to customers to date

This involves understanding past performance, trends from the serviceability indicators, and company actions necessary to address serviceability issues. This 'backward looking' assessment is mainly informed by the serviceability indicators. There has been a lot of effort within the industry south of the border to ensure that these serviceability indicators are measured accurately.

Stage B Is the future period different?

This involves understanding what would be different about the next regulatory control period that would necessitate changes in the typical levels of activity that have been sufficient in the past. This element is informed by the company's assessment of its economic level of capital maintenance. This should be based on the UKWIR approach and should be both forward-looking and risk-based.

This risk-based approach must recognise that the companies are required to deliver a minimum level of service to all of their customers.

Stage C Scope for improvements in efficiency

This involves assessing the relative efficiency of each company in terms of its approach to capital maintenance and capital works, its capital/operating expenditure balance and the potential for each company to improve its efficiency over the next price review period. This uses Ofwat's established approaches for determining relative efficiency and assessing each company's scope for further efficiency improvements.

Stage D Impact of the enhancement programmes

This requires an understanding of the implications of each company's quality investment programme on the base capital maintenance programme. This is informed by an assessment of whether the quality programme defers or removes the requirement for capital maintenance expenditure.

Our approach to capital maintenance in the Strategic Review of Charges 2006-10

In assessing Scottish Water's capital maintenance requirements in the Strategic Review of Charges 2006-10, we have taken account of:

- Ministerial Guidance on the overall objectives of the investment programme;
- the capital maintenance requirement identified in the Quality and Standards III process;

- the capital maintenance requirement identified in Scottish Water's first and second draft business plans;
- the Reporter's assessment of Scottish Water's capital maintenance proposals; and
- the results of Ofwat's capital maintenance econometric model.

Our original intention had been to conduct a rigorous analysis of Scottish Water's planned capital maintenance investment. This has not proved possible for three reasons:

- Scottish Water has only recently introduced the systems required to capture and monitor the serviceability of its assets. There are some doubts about the quality and consistency of the information available.
- The proposed capital maintenance programme was not sufficiently disaggregated to allow us to analyse or monitor its content.
- It was not possible to verify that the proposals would meet the Minister's objectives for the water industry.

We have also reviewed Ofwat's comments on the companies' plans for capital maintenance in its final determinations⁴⁸.

Our methodology for determining the appropriate level of capital maintenance has therefore included the following stages:

- An assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment was carried out using Ofwat's capital maintenance econometric models.
- An adjustment to the required level of capital maintenance expenditure to take account of any circumstances specific to Scotland that could affect Scottish Water's costs.
- An assessment of the scope for efficiency. We used the cost base approach to determine the scope for

⁴⁸ Future water and sewerage charges 2005-10 – Final determinations, December 2004.

efficiency and drew on the evidence gathered by Ofwat on the scope for continuing improvement. We have taken account of the scope for efficiency in determining the allowed level of capital maintenance.

An overview of how we set the appropriate level of capital expenditure to deliver the priorities outlined in the Ministerial Guidance

We had to take account of a range of issues that will affect Scottish Water's ability to deliver its capital investment programme efficiently. These 'critical factors' were:

- the proportion of Quality and Standards II that was not likely to have been delivered by March 2006;
- historical evidence on the size of investment programmes that were deliverable; and
- the incentive for Scottish Water to improve its performance.

Our overall approach is set out in Figure 5.3.

We adopted a different approach to setting targets for capital efficiency in capital maintenance and in quality enhancement expenditure. However, in both cases, out-performance of targets would increase the resources that are available to add outputs to the baseline investment programme for the regulatory control period.

We set out our step-by-step process for each investment category below:

For both capital maintenance and capital enhancement

1. Establish a fully defined investment programme

Following Ministerial Guidance, Scottish Water submitted its investment plan broadly in line with the agreed format for the second draft business plan. This format provided a list of projects and their associated outputs. It also included a separate list

Figure 5.3: Framework for capital investment targets

Ministerial Guidance on the objectives of the overall investment programme and the outputs required to be delivered Establish Scottish Water Investment Plan submission with initial investment programme costs, project by project, and detailed information on outputs Establish impact of Quality and Standards II overhang and build into baseline investment programme Reporter & regulator challenge: audit of scope of project solutions and costs SEPA and DWQR scrutiny: ensure that required outputs are Review in the investment baseline programme and Additional scrutiny by consultant engineers and Ofwat establish a baseline Capital maintenance Capital enhancement baseline investment baseline investment programme programme Ofwat capital maintenance Ofwat cost base Assess econometrics and cost relative base efficiency Ofwat targets for capital Ofwat targets for capital maintenance and scope for enhancement and scope out-performance by for out-performance by companies companies Assess scope to Assess degree to which improve Assess degree to which scope for improvement is scope for improvement is limited by size of limited by size of investment programme investment programme Determine the required level of capital expenditure and the Target maximum desirable outputs that can be delivered in accordance with Ministerial Guidance and within an overall level expenditure and of investment spend that is consistent with efficient deliver outputs Monitor the baseline investment programme for 2006-07 to 2009-10, for capital maintenance and enhancements Monitor including costs and outputs progress

that outlined the Quality and Standards II projects that are not likely to have been delivered by the end of March 2006.

2. Review the programme and establish a baseline

Delivery monitored by stakeholders

Scottish Water's investment plan has been scrutinised in detail by the Reporter, the quality regulators and this Office. We commissioned additional work from two leading engineering firms and Ofwat. We determined whether the programme met the objectives set out by Ministers. The output from this process was a baseline programme, which listed the projects required to deliver the investment requirements for capital maintenance and quality enhancement priorities.

For capital enhancement

3. Assess current efficiency gap

We have used Ofwat's cost base approach to determine the size of the procurement efficiency gap between Scottish Water and the companies in England and Wales.

4. Assess scope for further improvement

We have considered the scope for further improvement based on the targets set by Ofwat.

Establish the total allowable expenditure for capital enhancement

We used the results of Steps 3 and 4 to establish the total allowable expenditure for quality enhancement for each year of the next regulatory period.

For capital maintenance

6. Estimate the annual efficient level of expenditure for Scottish Water, consistent with the companies' recent performance

We used the capital maintenance econometric models developed by Ofwat to estimate the cost of maintaining serviceability of the current asset base at average levels of efficiency.

7. Adjust the results to take account of special factors

We considered representations from Scottish Water that would justify additional funding for specific capital maintenance objectives.

8. Check the adjusted results of the econometric models

We carried out a series of high-level comparisons to check that the adjusted results of the models did not underestimate Scottish Water's capital maintenance requirements.

9. Use the cost base approach to assess the current gap in capital expenditure efficiency

We used the cost base approach to determine Scottish Water's current capital efficiency position.

10. Assess the scope for further improvement

We took full account of Ofwat's expectations for improvement in capital efficiency when we set targets. Ofwat has published its final determinations⁴⁹ and we drew on the evidence accepted by Ofwat to inform our analysis of the further scope for improvement. This informed the targets that we set for each year.

11. Use the cost base results to set an appropriate level of capital maintenance spending

We used the results of the cost base to increase the adjusted allowance for capital maintenance that was suggested by Ofwat's econometric models. We considered these results with the observed capital maintenance spending of the highest spending company.

12. Set total level of capital expenditure and final baseline of projects with associated outputs

We set a total allowance for capital expenditure and a list of projects with associated outputs. This is the baseline against which we would expect stakeholders and customers to monitor and judge Scottish Water's performance.

⁴⁹ Future water and sewerage charges 2005-10 – Final determinations.

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The Strategic Review of Charges 2006-10: The draft determination

Economic regulation of the public sector water industry in Scotland

volume 4

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Executive summary

Introduction

This chapter provides further information about the framework for this draft determination. We explain:

- how we have adapted incentive-based regulation for use in the public sector;
- how we have introduced regulatory accounts;
- how we define the critical split between wholesale and retail activities; and
- how we have taken account of Ministerial Guidance and of Scottish Water's first and second draft business plans.

These factors have had an important influence on this draft determination of charges.

Incentive-based regulation in the public sector

Background

In the private sector the regulator has a duty to ensure that an efficient company can meet its licence obligations. As the regulator of a public sector corporation we have to ensure that Ministers' objectives are delivered for the lowest reasonable overall cost.

Incentive-based regulation

All of the UK economic regulators have used price cap (RPI-X) regulation. It is generally accepted that RPI-X price cap regulation has led to lower prices and higher levels of service for customers. Some commentators, however, have suggested that the approach is not consistent with a long-term investment strategy.

RPI-X regulation limits the prices that companies are allowed to charge their customers. The regulated company has to decide how to deliver the required level of service for the revenue that is available to it. This focuses management's attention on reducing costs.

Under the RPI-X framework, companies benefit if they can provide the required level of service for a lower cost than was allowed by the regulator. This difference increases returns to shareholders.

Customers benefit in the medium to long term because the regulator is able to set prices at a lower level in future regulatory control periods to reflect the lower reported costs of the regulated organisation. In the next regulatory control period, the regulated company will have to work harder to out-perform its regulatory contract.

In 'not-for-profit' private sector companies¹ the extra returns available from out-performing the regulatory contract may be available to customers more immediately. The company's managers have to determine how best to use any such extra return. They are likely to consider the following options:

- Improving the financial strength of the company, for example by building reserves or by undertaking spending that will facilitate future improvements in efficiency. Such action would benefit customers in the medium to long term.
- Investing to improve the levels of service to customers.
- Delivering price cuts for customers.

In July 2001, Frontier Economics² concluded that RPI-X creates a strong incentive to achieve efficiency gains. In their view, incentives are at their strongest when the regulator can identify good external benchmarks to estimate an efficient level of costs. This is consistent with our view that external benchmarking of Scottish Water against the privatised water companies in England and Wales is key to establishing the level of performance that should be required of Scottish Water.

In this draft determination, we have used a tailored version of RPI-X, which has been designed to take account of the public sector status of the water industry in Scotland.

¹ This includes companies such as Glas Cymru, a 'not-for-profit' company that owns Dwr Cymru Welsh Water, and Network Rail Ltd.

Frontier Economics, 'Incentives', published in July 2001 and included as Appendix 5 in the National Audit Office report 'Pipes and Wires'.

In this regard we have sought to learn from the experience of the Postal Services Commission (Postcomm), the only other UK regulator of a public sector company. Postcomm has indicated that it wants Royal Mail to have strong incentives to make efficiency savings, but notes the need to take account of market uncertainties as competition develops.

There are clearly close parallels between Postcomm's decisions on price limits and this draft determination. In particular, we have both needed to take account of the impact of the likely introduction of increased competition in our respective industries. In addition, we have both had to consider how to adapt the incentive-based framework to the circumstances of the public sector post and water industries.

Our analysis suggested that the framework for the water industry in Scotland needed to take account of the following:

- The objectives of the Government as the owner: the Government is primarily interested in the efficient delivery of its objectives.
- A reduced incentive to out-perform the regulatory contract because the Government is a different type of owner.
- Sensitivity concerning management bonuses: public sector businesses are relatively rare. It is difficult to reconcile the pressures of a public sector pay policy with the need to create a real incentive for out-performance.
- Access to government funding: in the private sector the providers of finance require a return on any capital provided. The public sector may not be as rigorous in its allocation of capital and as a result the regulated company may not face a truly hard budgetary constraint.

This last factor is particularly important. Price cap regulation seeks to establish a tight budgetary constraint which requires the company's management to reduce the costs that it incurs. In the public sector it is important that the owner does not accept a lower level

of performance than that set in the regulatory contract. In this regard we are encouraged by the February Ministerial Guidance on the principles of charging.

If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view their response should not have an adverse impact on customers.

Recent developments in the UK utility sector

RPI-X regulation has developed significantly in the past 20 years. It now appears that regulators initially underestimated the scope for efficiency. More recently, however, regulators have set tougher price controls. Companies have responded by attempting to 'sweat their assets' and reduce their cost of capital, but most have at least matched the improvement in efficiency required by the regulator.

The price reviews in 1994 and 1999 undertaken by the Office of Water Services (Ofwat) illustrate the development of RPI-X regulation. In its 1994 price review, Ofwat set efficiency targets that averaged between 3.3% and 4.3% for maintenance and enhancement expenditure for both water and waste water services. Ofwat³ has indicated that the companies delivered efficiency savings of 20% for water and of more than 10% for waste water capital investment.

In 1999, Ofwat set efficiency targets that ranged from 6% to 11.5%. Our analysis suggests that the companies have continued to improve efficiency faster than their regulatory contracts required. Current figures show that the companies have achieved efficiencies in water services of around 5% and for waste water services of around 10%⁴.

In recent years, industry commentators have made a number of criticisms of the RPI-X mechanism. These fall into four main categories:

- the impact on investment;
- the strength of incentives;

³ Ofwat publication 'Financial performance and capital expenditure of the water and sewerage companies in England and Wales 2003-04', page 46.

⁴ Based on performance up to 2003-04.

- financing of investment; and
- the impact of risk.

Each of these criticisms was addressed in the National Audit Office (NAO) report 'Pipes and Wires'. The NAO found that price cap regulation was fit for purpose. In particular, it found no evidence of underinvestment or of a lack of incentives to improve performance.

Some regulated companies responded to the tougher regulatory settlements at the end of the 1990s by focusing on the cost of capital. These companies sought to lower their effective weighted average cost of capital (WACC) by increasing their level of debt.

The two highest profile examples are the Yorkshire Mutual proposal and the creation of Glas Cymru. The Yorkshire proposal involved establishing a community 'not-for-profit' mutual company that would be 100% debt financed. It was envisaged that the mutual company would award all of the initial operating contracts to the Kelda Group plc (the pre-split holding company) and that competitive tendering procedures for the contracts would be introduced on a phased basis. Ofwat required the mutual to be made completely independent of its former owner and also required safeguards to be put in place that would protect members of the mutual company. The Kelda Group withdrew the proposal.

Glas Cymru and the Post Office

The experience of Glas Cymru

In November 2000, Glas Cymru agreed its purchase of Welsh Water from Western Power and Distribution (WPD). In structuring this transaction, senior managers at Glas Cymru took detailed account of the conditions set out by Ofwat for the creation of the Yorkshire Mutual. Glas Cymru was able to satisfy Ofwat that the proposal was consistent with customers' interests.

It appears that the 'not-for-profit' debt-funded Glas Cymru has reduced the cost of capital and improved the level of service provided to customers. We believe that Scottish Water could learn some useful lessons from the structure

and governance of Glas Cymru. Both companies are expected to match or exceed the levels of service provided by comparator companies.

Glas Cymru represents an interesting case study for three reasons:

- the way risk is managed;
- the company's emphasis on transparency; and
- · the use of incentives.

An additional factor that reduces the risk to customers is that Ofwat added a condition to Welsh Water's licence which prevents it from diversifying beyond its core activities of providing water and waste water services in Wales.

One of Glas Cymru's most striking features is the transparency that surrounds its operations. The company's website contains all of the important financial information. This transparency allows public and regulatory scrutiny of all of the company's operations. Such scrutiny may replace (at least to some extent) the scrutiny of shareholders and investment analysts. It also reassures customers that senior managers deserve the bonus payments that have been made. We believe that a similar commitment to transparency would benefit Scottish Water's customers.

Glas Cymru has created a financial buffer (a reserve of £350 million representing the excess of the regulatory capital value over the outstanding debt) to protect customers from any operational or financial shock. This replaces the normal equity 'cushion'. This buffer also reduces Glas Cymru's cost of capital. If there were to be an unexpected event, such as a drought⁵, the cost of that event could be met from reserves rather than by an immediate increase in prices.

Welsh Water's performance appears to have improved significantly since its purchase by Glas Cymru:

the level of service to customers has improved;

⁵ As occurred in Yorkshire in 1995, and which is estimated to have cost Yorkshire Water £250 million.

- prices have been cut; and
- operating cost efficiency has improved.

Glas Cymru represents a good example of how incentive-based regulation can be effective in a non-equity environment. A strong governance framework and the creation of a financial buffer seem to have played an important role in this success.

The experience of the Post Office

The Post Office provides another interesting example, within the public sector, of the importance of establishing a financial buffer. In recent years this buffer has helped ease the transition to a competitive postal services market.

The Post Office (including the telephone and mail services) became a public corporation as a result of the 1969 Post Office Act. The Government required a proportion of any retained profit to be used to purchase government securities or 'gilts'. These gilts remained on the balance sheet of the Post Office, but could only be used at the direction of UK Ministers.

The 'Mails Reserve' was endorsed by the 1999 White Paper on postal reform⁶. This White Paper set a target that 40% of retained earnings should be invested in gilts⁷. There is also a minimum value of gilts that the Post Office is required to purchase each year. This limit has been set so that public expenditure planning is not affected by fluctuations in the Post Office's trading. The White Paper also set out the circumstances in which Ministers would use the financial reserve that has been accumulated.

The current value of gilts held by the Post Office is well over £1 billion. This is a very significant sum relative to any financial or operational risk that the Post Office is likely to face. It would seem sensible to adopt a similar approach in the way in which the public sector water industry in Scotland is funded.

We agree with Ofwat's view that, in the absence of an equity cushion, the creation of a financial reserve can

play an important role in insulating customers from operational or financial shocks. We also believe that the requirement to create such a financial buffer may encourage Scottish Water to become more efficient. It would certainly help make it clear that the company should not look to the public purse in the event of any shock. Until such a buffer has been fully designed, we believe that a tight budgetary constraint requires any outperformance to be returned to customers in lower prices eg by Scottish Water foregoing some of the revenue that it could collect from customers. We propose to measure Scottish Water's out-performance with reference to the expected performance against the financial ratios in that year (after any adjustments to ensure like with like comparison).

Our approach to incentives

We have shown how price cap regulation limits the budget that is available to a regulated company for delivering a specified level of service. If a company succeeds in reducing the costs that it incurs, it is able to retain the difference for a set period.

In the private sector model this allows shareholders to receive a greater return on their investment. Shareholders typically choose to align management bonuses with out-performance of the regulatory contract. The Glas Cymru case study demonstrated how out-performance of the regulatory contract can be returned to customers or can be invested to protect customers from any future operational shocks.

Our analysis of incentive-based regulation has led us to draw the following conclusions.

- There should be a tight budgetary constraint: price cap regulation will not be effective if the organisation believes that there could be an advantage from spending more than is absolutely necessary.
- There should be an incentive for the regulated company to out-perform the regulatory contract: the contract must be transparent and achievable and it must be monitored rigorously.

⁶ Entitled 'Post Office reform: A world class service for the 21st century' published 8 July 1999 and available via the DTI's website at this link: http://www.dti.gov.uk/postalservices/white_paper.htm

In 2003 the Secretary of State for Trade and Industry, Patricia Hewitt, issued a direction under Section 72 of the Postal Services Act 2000, updating this gilt scheme and naming it 'Mails Reserve'.

- The interests of management should be aligned with the level of performance that the regulated company needs to deliver under the regulatory contract.
- Incentive-based regulation benefits customers: in the private sector, out-performance will increase shareholder returns initially but this improved performance is passed on to customers at the next price determination. In not-for-profit companies (such as Glas Cymru) or in the public sector, outperformance can be used to bolster financial reserves, to cut prices or to improve the level of service.

Our review further highlighted that incentives for improving capital efficiency may have to be somewhat different in the public sector. In the private sector, reductions in capital spend from increased efficiency will bring benefits to shareholders and result in lower prices for customers. In the public sector there are potentially different pressures. High levels of investment are typically viewed as politically desirable, particularly where there are customer service and/or network performance issues. This could reduce the incentives on the regulated company to out-perform the regulatory contract on capital expenditure.

In the public sector context, this risk can be mitigated if any out-performance of the capital expenditure regulatory contract is invested in additional capital projects which improve customer service, the environment and/or public health.

The financial framework for stable prices

This Strategic Review of Charges sets maximum charges for customers which do not increase in real terms. The prospects for charges in the 2010-14 regulatory control period will depend on how Scottish Water improves its cost efficiency.

It is also important that we make progress in creating a financial buffer that would be capable of absorbing any operational shocks.

The importance of the tight budgetary constraint

Regulators set price or revenue caps in order to create a tight budgetary constraint for the regulated company. Most regulated companies are subject to pressure from shareholders to out-perform the regulatory settlement. In other words, the regulator is effectively setting a minimum acceptable level of performance. In the case of Scottish Water it is important that both the owner and the Board recognise that the regulatory settlement (or contract between the regulated company and its customers) is the minimum level of acceptable performance. We have proposed charges caps on this basis.

This draft determination also sets out a forecast of the likely new borrowing that will be required by Scottish Water. We have assumed that this level of borrowing should be increased only in exceptional circumstances and only if the new Water Industry Commission agrees that more borrowing is an appropriate response to exceptional circumstances. This is not wholly dissimilar from the stand-by credit that is available to Welsh Water.

Establishing a buffer to absorb operational shocks

At present, Scottish Water's customers are more immediately exposed than customers in England and Wales to the financial risks of the business. In England and Wales, the presence of private equity acts as a significant shock absorber, and as a result protects customers. The creation of the not-for-dividend company Glas Cymru required Ofwat to think more about corporate governance and about protecting customers from the impact of any such operational shocks.

We examined four ways to develop a buffer to withstand operational shocks. These involve using the revenue flexibility generated by out-performance of the regulatory contract to:

- improve financial ratios by borrowing less;
- · buy a safe, liquid asset;

- pay dividends to a contingency fund held by the Scottish Executive; and
- accelerate the investment programme.

In the medium term, we believe that the creation of a financial buffer is important. In our view, the most effective way to create such a buffer would be through the purchase of a liquid security, such as index-linked gilts. We recognise that it may take some time to agree the details of this proposal. In the meantime, we believe that any out-performance by Scottish Water should be returned to customers by Scottish Water foregoing a portion of the revenue available to it. This is consistent with the need to maintain a tight budgetary control.

Background to the introduction of regulatory accounts

Regulators rely on being able to make like-for-like comparisons between companies or over time to form a view about the performance of a regulated company and ensure that customers receive value for money.

In order to be sure that the comparative analysis they carry out is reliable, regulators need accurate information. Most regulators rely on regulatory accounts to provide this information. These accounts provide detailed information that has been clearly and consistently defined.

Ofwat implemented regulatory accounts in 1992-93 in order to inform its first full price review of the water industry in England and Wales. We have introduced regulatory accounts for this draft determination in order to facilitate performance monitoring, the setting of the overall level of wholesale charge caps and to improve our understanding of the performance of the core business.

The introduction of regulatory accounts will ensure that the new Water Industry Commission complies with the amended remit that results from the Water Industry (Scotland) Act 2002 and the Water Services etc. (Scotland) Act 2005.

Core/non-core activities

Scottish Water's primary role is to provide water and waste water services to customers. These services are sometimes referred to as its core activities or as the core business. However, Scottish Water also seeks to provide customers with 'value added' services. Some of these are closely related to its core activities, others are quite separate.

Our advice to Ministers in the Strategic Review of Charges 2002-06 covered both core and non-core activities of the then three authorities. We expressed our concern about the lack of focus on the core business. In particular, we noted the potential increase in risk within the business caused by diversification into markets where competition existed, and questioned investment in non-core activities.

Even if non-core activities were profitable straight away, there is a danger that these profits are achieved at the expense of not realising the potential for efficiency in the core business. If management time is diverted away from improving efficiency in order to focus on new ventures, this may disadvantage customers. We therefore welcomed the Water Industry (Scotland) Act 2002 which limited our remit to promoting the interests of customers of the core business. This brought our remit more into line with that of Ofwat.

Protection of core customers in England and Wales

In England and Wales there is a clear separation of appointed (core) and non-appointed activities. The following factors are critical:

- The appointed water and sewerage business is ring fenced by means of licence conditions.
- There is effective accounting separation of the core activities.
- There are clear transfer pricing rules.

This regime has been effective. Even when holding companies have experienced difficulties (for example Hyder plc and Enron), these problems have not impacted on customers of the core water and sewerage business.

Practical implications of the Water Industry (Scotland) Act 2002

The change in our remit to promote the interests of customers of Scottish Water's core business has had a major impact on this Strategic Review.

In this draft determination we have set charge limits for Scottish Water's core activities – water and waste water services to household customers and all wholesale services to licensed retailers. In setting charges, we have considered only the costs incurred by Scottish Water in undertaking its core activities. We have not taken account of the funding needs of Scottish Water's non-core activities.

We have drawn on the experience of Ofwat in preparing a detailed description of core activities for regulatory accounting purposes.

We have treated the following activities as core activities for the purpose of the regulatory accounts⁸:

- Abstraction, treatment, storage, conveyance and distribution of potable water.
- Conveyance, treatment and disposal of waste water, including public septic tanks.
- Water and environmental quality management.
- · Emergency planning and response.
- Physical disconnection.
- · Household customer accounting and billing.
- Household customer credit management.
- Household customer contact management.

- Household customer billing complaints, enquiries resolution and Guaranteed Minimum Standards (GMS).
- Operational complaints resolution and GMS for all customers.
- Provision of water, sewerage and trade effluent services to non-household customers under ss. 17 and 20 of the 2005 Act.

The retail and wholesale separation

The Water Services etc. (Scotland) Act 2005 will introduce a framework for competition. Until recently there was little competition in the supply of water and sewerage services. There were a few small brokerage (retail)⁹ deals and some larger users had made alternative arrangements outside the public network.

The Water Services etc. (Scotland) Act will allow retail competition for non-household customers. The Act will require the new Water Industry Commission to set both an overall level of wholesale charges and a retail charge cap.

We have used the regulatory accounts to define retail and wholesale activities in detail. In defining Scottish Water's retail and wholesale activities, our starting point was to define all customer-facing activities as retail. In this model, a non-household customer should only interact with their retailer. This is similar to the situation in other industries. We would not seek to return a faulty garment to the wholesaler or to the factory where it was made.

We identified the following retail activities:

- retail pricing and tariffs;
- the billing process;
- collection of charges;
- · debt follow up and debt management;
- meter reading and customer meter operations;

This list also takes account of the retail/wholesale split described in Chapter 9.

Brokerage: a deal by which water is sold to customers by a third party, who is not responsible for anything other than the final supply of water to a customer's premises. Off-network: a privately owned water supply or waste water treatment and disposal system that reduces or eliminates the need for a connection to the public water and waste water system.

- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues:
- marketing;
- managing the connection/disconnection process;
- · scheduling septic tank emptying; and
- supporting wholesale emergency responses.

The overall level of wholesale charges that we have set is consistent with this definition.

Licensing regime

Under the framework created by the Act, all new entrants and the retail subsidiary of Scottish Water will have to be licensed. Licences will govern the relationship between Scottish Water, its retail subsidiary and new entrants.

The 2005 Act will require the new Commission to administer the licensing regime. New entrants will be required to demonstrate that they have the necessary financial resources and managerial and technical competency to satisfy the licence conditions.

The principles of regulatory accounts

We introduced regulatory accounts to the Scottish water industry to:

- improve the transparency of our monitoring and comparisons of performance;
- separate core and non-core activities; and
- separate retail and wholesale activities.

We took account of a number of Scottish and UK-wide factors in finalising the regulatory accounts for the Scottish water industry. The key principles that we established were that they should be:

- consistent, where appropriate, with Ofwat's regulatory accounts;
- reconcilable with statutory accounts;
- auditable;
- in the interests of stakeholders:
- consistent with accepted regulatory accounting practice; and
- would facilitate the collection of information for monitoring performance and setting charge caps.

We also identified the following key principles that should underpin the separation of retail and wholesale activities:

- practicality;
- · flexibility;
- cost recovery; and
- transparency.

We received general support for our view, expressed in our methodology consultation, that there should be a single definition of wholesale and retail activities. The overall level of wholesale charges will include all of the services that must be provided by Scottish Water (no matter how those are delivered to the retailer).

The retail margin (the difference between the retail charge and the wholesale charge) covers the costs of all of the activities that are the responsibility of the retailer (irrespective of whether the retailer chooses to undertake all of these activities itself or not).

We recognise that it is possible that some new entrants may want to expand the scope of retail activities further. We have endeavoured to ensure that we have collected sufficient information about the costs of activities to respond to any such future development.

We also believe that our regulatory accounts have captured sufficient information about costs and activities to allow us to make a robust assessment of the overall level of wholesale charges. In their Ministerial Guidance, the Scottish Ministers have confirmed that charges should be broadly reflective of the costs of providing the service. This should apply equally to the wholesale and retail charges. It is important that overall wholesale charges are set at an appropriate level. If it is set too low, new entrants would benefit, but the core water and waste water treatment and network business would suffer. Ultimately this would affect the level of service provided to customers. If wholesale charges are set too high, there is a risk that new entrants would seek to challenge this price under the Competition Act 1998.

Calculation of the overall level of wholesale charges draws on information collected in the regulatory accounts. This should allow Scottish Water and new entrants to understand our calculations, and should reassure both new entrants and the incumbent supplier that the overall level of wholesale charges is fair.

The regulatory accounts

The regulatory accounts were prepared on behalf of this Office by Ernst & Young LLP, supported by Black and Veatch Consulting Limited.

The outputs of the project were as follows:

- A complete set of regulatory accounting guidelines designed specifically for Scottish Water, but consistent where appropriate with those developed by Ofwat.
- A set of regulatory returns (both definitions and tables) capable of detailing all of the required information for the core business, separated into wholesale and retail activities. These returns will be fully consistent within themselves, and reconcilable in principle to the statutory accounts.

- A set of detailed guidance to auditors and Reporters, to enable them to audit regulatory account submissions effectively.
- A series of draft versions of the above, enabling Scottish Water to provide feedback which, where possible, will be taken into account in developing final versions.

Ernst & Young outlined in a detailed report the process they had gone through to define the core and non-core separation and the wholesale and retail separation. The report also detailed both the issues that arose when undertaking the project and those which Ernst & Young believe may arise if an effective separation of Scottish Water is to be made in 2006. Copies of the report are available on our website at www.watercommissioner.co.uk

Review of the timeline

Our approach to this draft determination was based on a clear timeline which set out in detail:

- the dates by which Scottish Water needed to provide information:
- the points at which stakeholders could influence the Review; and
- dates when we would comment on our progress.

The timeline for the Review process was originally outlined in Volume 1 of our methodology consultation, which was published in July 2004. We have published all information relating to this Review on our website (with the exception of Scottish Water's first draft business plan). This has helped to ensure that customers and stakeholders, including Scottish Water, have been kept up-to-date and fully informed about our progress in completing this Review.

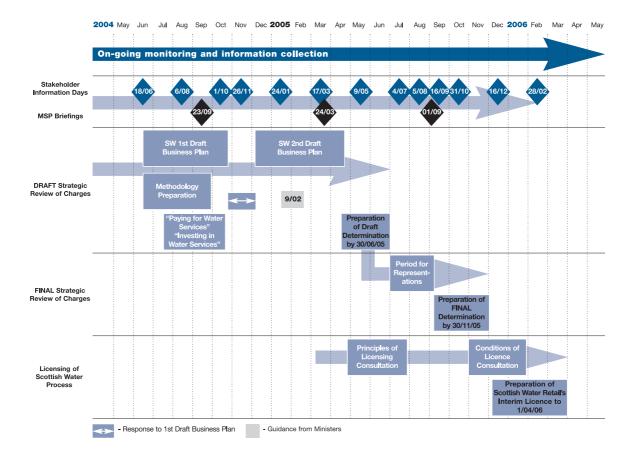


Figure 1: Timeline for the Strategic Review of Charges 2006-10

A critical input to the Strategic Review process has been the guidance we received from the Scottish Ministers. In May 2004, Ministers provided high-level guidance which set out the principal factors that we were to consider when formulating our advice¹⁰. In February 2005, we received the detailed Ministerial Guidance on the Scottish Executive's objectives for this Review.¹¹ This detailed Guidance set the key customer service standards, investment and principles of charging parameters for Scottish Water.

Following publication of this draft determination, the new Water Industry Commission may receive further Guidance from Ministers. This will inform the final determination in November 2005.

Review of Scottish Water's first draft business plan

Customers and other stakeholders are entitled to expect Scottish Water to have clear, well-developed plans for the business. We asked for two draft plans to inform our Strategic Review of Charges.

The first draft business plan represented Scottish Water's first opportunity to advise us of its strategy for the future, both in terms of investment in the infrastructure and the charges it sought to impose on its customers.

We required Scottish Water to provide information about the level of operating and capital costs that it expected to incur. We also required Scottish Water to provide a detailed analysis of the investment programme and its impact on the level of service to customers.

¹⁰ This initial guidance was contained in the commissioning letter of 26 May 2004 from the Minister for Environment & Rural Development, Ross Finnie MSP, to the Commissioner.

¹¹ This detailed guidance was contained in the letter of 9 February 2005 from the Deputy Minister for Environment & Rural Development, Lewis MacDonald MSP, to the Commissioner.

We issued detailed guidance to Scottish Water on the format and content of the plan to ensure that we would receive the information necessary for us to set charge limits.

Our guidance for the first draft business plan was similar to that which Ofwat uses for the companies south of the border. However, in framing our information requirements we took full account of the Scottish context. For example, we did not consider it necessary to include a detailed asset inventory and cost base analysis.

Scottish Water submitted its first draft business plan to this Office and to the Scottish Executive on 29 October 2004. It also provided a short public summary. The structure of the business plan was consistent with the guidance.

Scottish Water also provided a separate document entitled 'Special factors'. This document highlighted the areas in which Scottish Water considered that its operating costs were necessarily higher than those incurred by other water and waste water companies against which it might be benchmarked. The special factors document sought to justify Scottish Water's view that its allowed operating costs should be significantly higher than those predicted by direct comparisons with other water and waste water companies.

Key messages from Scottish Water's first draft business plan

The key messages from Scottish Water's first draft business plan were as follows:

- Scottish Water had sought to strike a balance between the level of charges that it would be seeking to impose on customers, the scale and pace of investment in the infrastructure and the level of additional borrowing that would be required from the Scottish Ministers.
- The key priorities identified by Scottish Water over the period 2006-10 were to maintain or improve existing services, reduce the risk of sewage flooding and improve drinking water quality.

- These priorities had been established after conducting independent customer research and by working closely with the Water Customer Consultation Panels
- In order to meet these priorities, Scottish Water was proposing a substantial investment programme amounting to £2,211 million over four years. This equates to £229 per property in Scotland.
- This level of investment would require price increases of 5% (in real terms) over the period 2006-10.
- The level of borrowing would also need to increase by a further £712 million.

The role of the Reporter

A key element of the Reporter's role is to scrutinise the capital investment programme proposed by Scottish Water. The Reporter audited a sample of the programme, and challenged the scope of requirements, the proposed solutions and the basis of cost estimates for specific schemes. His key findings were as follows:

- A number of elements of Scottish Water's proposed investment programme had been over-costed (such as expenditure projections on waste water treatment works and leakage reduction works).
- Scottish Water's asset inventory and other related information was not fit for purpose and further work was required to enable accurate projections to be made.
- A number of Scottish Water's costings were not supported by sufficient documentary evidence, for example the property figures for the base capital maintenance expenditure projections.

Publication of public summary

On 3 December 2004 we issued a press release to accompany Scottish Water's publication of its summary business plan. We noted that although Scottish Water projected an increase in charges of 5% in real terms

(13.6% nominal), we did not believe that such an increase was likely to be required. This view reflected our detailed analysis of Scottish Water's first draft business plan.

Scottish Water's second draft business plan

The second draft business plan was particularly important since it presented Scottish Water with an opportunity to explain the costs that it would incur in delivering the Ministers' objectives set out in the February Ministerial Guidance on investment priorities. We amended the guidance for the first draft business plan to take account both of new information that we felt we required but also areas where we considered that the guidance needed to be more specific.

The main differences were in the following areas:

- more detailed tariff information;
- definition of retail costs;
- output performance improvements;
- definition of Quality and Standards II overhang; and
- taxation.

In our view the key points in Scottish Water's second draft business plan were:

- Scottish Water believed that the Ministers' objectives should be re-phased since delivering them within the 2006-10 regulatory control period would lead to unacceptable charge increases. Scottish Water also suggested dropping some objectives and increasing the available borrowing.
- Scottish Water had calculated the investment to meet the Ministers' essential and desirable investment objectives at £3.1 billion. The essential objectives were costed at £2.9 billion (both at 2003-04 prices). Scottish Water assessed its revenue need on the basis of just the essential investment.

- The plan states that a charge increase of 88% in real terms between 2006 and 2010 would be required. The plan states that lower investment in 2010-14 would allow charges to fall substantially during that period.
- The investment programme in the second draft business plan differed from that contained in its first draft business plan. This reflected the Ministers' objectives for improving drinking water quality and environmental compliance.

Scottish Water sought to justify a much higher level of operating and capital costs than comparisons with other water and waste water companies would suggest was appropriate. Operating costs were forecast to increase by over 30% in real terms.

Scottish Water also proposed the creation of a contingency fund by restricting the amount of available debt that it would borrow. This had a dual impact on charges. It increased directly the revenue (and surplus) required from customers. This in turn resulted in a higher tax charge, which further increased charges to customers. We believe that pending the decision to establish a buffer mechanism of the sort mentioned above, the interim determination process and the logging up/down process are capable of capturing variances in cost that are outside the control of management. If management cannot deliver the outputs required under the regulatory contract, it is for the Scottish Executive to take whatever steps it believes are necessary. The Ministerial Guidance makes it clear that customers should not be asked to pay twice for the same output.

The Reporter submitted his report to us in May 2005 and we have published this on our website. In general the Reporter raised concerns about the cost, scope and design of the investment programme. He also highlighted concerns about the approach that had been used and the proposal to commit large sums of money without proper analysis.

In response to concerns raised by the Reporter and our own analysis of the plan, we commissioned a more detailed review of the investment programme, including an increased number of site visits. This has helped to inform our draft determination.

Chapter 1: Introduction

Introduction

In this volume we outline some of the key elements of the framework that underpins the Strategic Review of Charges 2006-10.

It is important that customers and stakeholders fully understand how we have arrived at the targets set in the Review. In this volume we explain in detail:

- how we have adapted incentive-based regulation for use in the public sector;
- how we have introduced regulatory accounts;
- how we define the critical split between wholesale and retail activities; and
- how we have taken account of Ministerial Guidance and of Scottish Water's first and second draft business plans.

This volume is presented in three sections.

Section 1 explains incentive-based regulation and sets out how we have adapted this approach for use in the public sector.

- Chapter 2 discusses some important background issues. This includes the lessons that we can learn from regulation in other industries and why we have needed to tailor our approach for the public sector water industry in Scotland.
- Chapter 3 describes incentive-based regulation and the benefits it brings to customers and stakeholders.
- Chapter 4 discusses recent developments in the UK utility sector and their impact on the review.
- Chapter 5 contains a case study of Dŵr Cymru (Welsh Water), the not-for-dividend company, limited by guarantee, which provides water and waste water services in Wales. It also discusses the financing of the Royal Mail.

Section 2 covers the introduction of regulatory accounts and its impact on the Strategic Review of Charges 2006-10.

- Chapter 6 discusses the financial framework for stable prices.
- Chapter 7 outlines the background to the introduction of regulatory accounts for the water industry in Scotland.
- Chapter 8 discusses the separation of Scottish Water's 'core' and 'non-core' activities.
- Chapter 9 explains how we have met the requirement of the Water Services etc. (Scotland) Act 2005 to split Scottish Water's wholesale and retail activities.
- Chapter 10 describes the main features of the regulatory accounts.

Section 3 examines the Ministerial Guidance. It also reviews Scottish Water's business plan submissions.

- Chapter 11 briefly outlines the timeline for the Strategic Review of Charges 2006-10.
- Chapter 12 reviews Scottish Water's first draft business plan, submitted in October 2004.
- Chapter 13 provides the Reporter's view of Scottish Water's first draft business plan.
- Chapter 14 discusses the most important elements of the Ministerial Guidance.
- Chapter 15 contains a review of Scottish Water's second draft business plan, submitted in April 2005.
- Chapter 16 provides the Reporter's view of Scottish Water's second draft business plan.

Section 1: Incentive-based regulation in the public sector

Chapter 2: Background

Introduction

In Volume 2 we discussed the role of economic regulation. In the private sector, there exists a contractual relationship between the Government and the private utilities. Each utility has a licence to operate that requires it to meet standards of operation that are considered appropriate in terms of social, environmental and public health policy objectives. The economic regulator takes account of all such issues that arise from legislation or other government guidance when determining the outputs that are to be delivered, and then sets the charge Thereafter, he depends on limits accordingly. shareholder pressure to ensure that these are delivered as efficiently as management can achieve, and simply has to monitor performance to ensure that the defined standards are properly achieved.

In the public sector, the regulator has to assess the lowest reasonable overall cost of delivering the objectives set by the Scottish Ministers. He cannot rely on the presence of market forces to deliver efficiency.

In this chapter we discuss the mechanisms by which regulators can incentivise companies to achieve efficient costs. We outline the importance of building on the experience of other regulators in applying incentive-based regulation to monopoly businesses. In particular, we examine the approach that Postcomm is taking in regulating Royal Mail. Finally, we discuss how we have tailored our approach to the requirements of the public sector water industry in Scotland.

Lessons learnt from more than 20 years of RPI-X regulation in the UK

Price cap regulation (RPI-X) sets the maximum prices that companies can charge for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to maximise profits.

The RPI-X methodology was first introduced in the early 1980s by Professor Stephen Littlechild. He suggested

that a price cap would create an incentive for regulated firms to achieve and improve operational efficiency. He also asserted that this should reduce the amount of information required relative to 'rate-of-return' regulation.

RPI-X has subsequently been used in regulating all other privatised utilities in the UK – the gas industry from 1986, the airports (BAA) from 1987, the water industry from 1989, the electricity industry from 1991 and the railway industry from the mid 1990s.

There is, therefore, considerable experience of using price cap regulation in the UK. There has been widespread scrutiny of this approach by academia, industry experts and regulators. It is generally accepted that RPI-X price cap regulation has led to lower prices and higher levels of service for customers.

We have used a tailored version of RPI-X in the Strategic Review of Charges 2006-10. We believe that the revisions we have made have taken account both of the public sector status of the water industry in Scotland and the risks identified by industry commentators.

Experience of Postcomm

In adapting RPI-X to fit the situation of the public sector water industry in Scotland, it has been useful to review the experience of Postcomm, the only other UK regulator of a public sector company.

In March 2001, Postcomm became responsible, under the Postal Services Act 2000, for the independent regulation of the postal service market in the UK. While Postcomm's statutory duties and powers are similar to those of the other economic regulators in the UK, there are a number of important differences. These include the following:

 Postcomm has a duty to maintain the universal service. The universal service obligation ensures that letters are delivered anywhere in the UK at a uniform and affordable stamp price.

- Royal Mail remained a public sector company, wholly owned by the Government. It dominated the letter post market.
- A competition framework was introduced.

There are clear similarities with the public sector model for the water industry in Scotland.

In its January 2002 report¹² 'Opening the Post', the NAO considered the risks faced by Postcomm and recommended that these should be managed by:

- adhering to the principles of good regulation, promoted by the Better Regulation Task Force, of transparency, accountability, proportionality, consistency and targeting;
- being seen to act in an impartial and independent way, free from regulatory capture of vested interest groups;
- employing staff with sufficient experience and expertise of the postal market and economic regulation; and
- obtaining sufficiently robust and reliable information on the costs and performance of Royal Mail in a way that compensates for the asymmetry of information between the Royal Mail and Postcomm.

We consider that these recommendations are equally relevant to our role in regulating Scottish Water.

In particular, we have invested significant resources in ensuring that we have accurate information. This process has been further enhanced by the introduction of a Reporter.

The Postcomm price review

Postcomm has recently completed its analysis for the 2006 price control review of Royal Mail. It has consulted on:

the length of the price control period;

- the use of RPI-X;
- the extent of tariff baskets:
- the use of a 'cash' or 'regulatory asset base' approach to financing; and
- which targets for quality of service and incentives are appropriate.

Postcomm has continued to use the RPI-X approach. It has indicated that it wants Royal Mail to have strong incentives to make efficiency savings, but notes the need to take account of market uncertainties as competition develops.

Postcomm's initial proposals were published in May 2005 and the final proposals are due in October 2005.

There are clearly close parallels between Postcomm's decisions on price limits and this draft determination. In particular, we have both had to take account of the impact of increased competition in our respective industries.

Making our approach appropriate in Scotland

Both Postcomm and this Office have had to consider how to adapt the incentive-based framework which is used to regulate private sector companies to the circumstances of the public sector post and water industries. We have considered the following issues:

- The objectives of Government: Government is primarily interested in the efficient delivery of its objectives.
- A reduced incentive to out-perform the regulatory contract: in the private sector, shareholders drive management to out-perform regulatory targets. An alternative approach needs to be found for the public sector.
- Sensitivity concerning management bonuses: public sector businesses are relatively rare. It is difficult to

^{&#}x27;Opening the Post – Postcomm and postal services – the risks and opportunities', Report by the Comptroller and Auditor General, published by the NAO, 24 January 2002.

reconcile the pressures of a public sector pay policy with the need to create a real incentive for out-performance.

 Access to government funding: in the private sector the providers of finance scrutinise carefully requests for more capital. The public sector needs to establish a similar discipline.

We discuss these issues in more detail in Chapter 3.

Summary

Price cap regulation establishes a hard budgetary constraint. This is critical to improving the cost efficiency of regulated companies.

There is now more than 20 years' experience of applying RPI-X incentive-based regulation in the UK. We have learned from this experience and, by adapting the RPI-X regime to the situation of the public sector water industry, have set Scottish Water a challenging but achievable regulatory contract.

Section 1: Incentive-based regulation in the public sector

Chapter 3: Incentive-based regulation

Introduction

This chapter sets out how we have adapted incentive-based regulation to the public sector. We begin by outlining the key features of incentive-based regulation. We look at the benefits it brings and also at perceived shortcomings and how they can be addressed. We examine the rationale for incentive-based regulation in the private sector and look at how effectively it has performed in different industries. We then look at RPI-X implementation issues for the public sector and discuss why we have used incentive-based regulation in the Strategic Review of Charges 2006-10.

How does RPI-X incentive-based regulation work?

Where RPI-X regulation is used, regulators set prices for companies in periodic determinations. The determination of prices is a detailed analysis of the revenue required by the regulated company to deliver the appropriate level of service to customers. Prices are typically set for five-year periods and are linked to inflation. The price cap is calculated in two stages:

- 1. The regulator establishes the revenue that the regulated company is likely to require to run its business efficiently. The regulator has a duty to ensure that a well-managed company has sufficient funds to deliver its operational services, its investment programme and the required level of customer service. The regulator takes account of the following factors in determining the appropriate level of revenue:
- the degree of efficiency improvement that is achievable (from a consideration of the benchmark level of efficiency and an achievable rate of catch-up);
- the return on capital that investors in the industry would expect;
- tax obligations that the company will incur; and
- other factors that influence costs, such as changes in pension funding requirements.

The regulator then converts the required revenue into a price cap. In so doing the regulator takes account of the projected number of customers and consumption per property.

The company is allowed to increase its price every year by 'X' points less than the Retail Price Index in the previous year. In certain industries, such as the water industry in England and Wales, X can be negative and, as a result, the annual price increment could be above RPI. In the final determination of price limits for 2005-10, Ofwat allowed water and sewerage companies to raise its prices above the expected rate of inflation.

The regulated company has to decide how to deliver the required level of service for the revenue that is available to it. This focuses management's attention on reducing costs.

In the UK, it is generally agreed that price cap regulation has succeeded in encouraging utilities to improve their efficiency. For instance, since privatisation of the electricity industry in 1991, distribution network operators have reduced their operating costs by more than 30% in real terms¹³.

Price cap regulation is widely understood by regulators, regulated companies and financial institutions. Our use of RPI-X regulation in Scotland will also allow more direct comparison with the industry in England and Wales.

How does rate-of-return regulation work?

In the rate-of-return regulation model, the regulator sets the return that a company can earn. A company therefore has no incentive to reduce costs.

The main advantage of rate-of-return regulation is that it is relatively transparent. Regulated companies understand the return they will earn on the costs that they incur. This helps with long-term planning and provides security for investors.

Ofgem, 'Electricity Distribution Price Control Review Update', October 2003.

Rate-of-return regulation may also provide an incentive to over-invest. This will also increase customers' bills without a corresponding increase in the level of service.

Given its relative inefficiency, using rate-of-return regulation to regulate the Scottish water industry would likely lead to higher bills. There would be no obvious pressure on Scottish Water to reduce its costs.

Incentive-based regulation in the private sector

Under the RPI-X framework, companies benefit if they incur lower costs than the regulator allowed. This is because they retain the difference between the cost allowed by the regulator and the level of cost that they incur. In the private sector, this could be used to increase shareholder returns.

Customers benefit in the medium to long term because the regulator is able to set prices at a lower level in future regulatory control periods to reflect the lower reported costs of the regulated organisation. In the next regulatory control period, the regulated company will have to work harder to out-perform the target. Similarly, there are strong incentives to meet the level of performance set by the regulator since prices to customers are capped. The owners of the company would have to accept a reduced return on their investment if this level of performance is not met.

RPI-X incentivises both the management and the owner to out-perform the regulatory level of performance. Cost reductions can be achieved by:

- operating expenditure savings, through more effective management; and
- more prudent and efficient capital investment.

Regulators have been keen to ensure that the management and staff of not-for-profit companies are given the right incentives to out-perform the regulatory contract. This is particularly important in the absence of

shareholder pressure to perform. The following examples illustrate the approaches that have been taken:

Glas Cymru¹⁴: the remuneration of Glas Cymru's executive directors is designed in such a way that a high proportion of the maximum potential pay is linked directly to company performance. Half of the maximum bonus is based on financial performance (measured by growth in financial reserves) and the other half is based on how well the company delivers services to customers.

Network Rail Limited: Network Rail's Management Incentive Plan (MIP) is designed to: "create the potential to reward outstanding performance based on individual contribution and the overall success of Network Rail in meeting the objectives of the Business Plan".¹⁵

Has incentive-based regulation worked in the private sector?

In 2002, the National Audit Office carried out a comprehensive review into the benefits and risks arising from RPI-X regulation in the regulated utilities. Its conclusions were published in April 2002 in the report 'Pipes and Wires'. 16

Overall, the NAO report concluded that:

"The main challenge facing regulators is to create incentives for monopoly companies to deliver effective and efficient networks, but without creating distorted or unintended incentives, or imposing excessive burdens on regulated companies. There is evidence that the way that regulators have used RPI-X has been successful in achieving these objectives. Our analysis shows that customers have seen lower prices and higher quality of service, and regulated companies have been able to cut costs and invest in their networks, while continuing to finance their functions."

The report looked at the use of RPI-X price cap regulation in the telecommunications, electricity transmission, electricity distribution and water industries.

¹⁴ Source: Interim statement of Glas Cymru policy for the remuneration of directors, Glas Cymru Annual Meeting (2001).

Source: Management Incentive Plan Statement – 2002-03. Network Rail Limited.

^{16 &#}x27;Pipes and Wires', Report by the Comptroller and Auditor General HC 732 Session 200102002: 10 April 2002, published by the National Audit

The NAO report concluded that in all of these industries the companies have found ways to operate more efficiently. They have either reduced their costs or, in the case of water where costs have increased to deliver quality improvements, have incurred expenditure more efficiently. The report notes the following:

- In telecommunications, BT Network achieved a weighted average rate of reduction in real unit costs of 9.4% up to 1999-2000.
- National Grid Company has reduced controllable operating costs by 50% since 1990.
- The overall operating costs of electricity distribution businesses fell by around 25% in the period 1994-95 to 1997-98.

These reductions in costs have been accompanied by maintained or improved levels of service to customers. As an example, we can consider performance in the number of interruptions to these services:

- Interruptions in the supply of electricity have fallen since 1990.
- The number of water customers subject to unplanned supply interruptions has fallen since 1990.
- The percentage of successfully completed telephone calls has remained at a very high level.

The regulators have been able to pass on the benefits of efficiency gains to customers through lower prices.

- In telecommunications, charges for some services fell by 13% a year in real terms as a result of price control targets.
- The 2000-05 electricity distribution price review cut distribution charges on average by 24% in real terms. The recently finalised price limits for 2005-10 restrict rises to 1% on average in the first year and to no more than the rate of inflation thereafter.

 Ofwat reduced the average household bill by £35 in real terms between 1999-00 and 2004-05.

In July 2001, Frontier Economics¹⁷ concluded that RPI-X creates a strong incentive to achieve efficiency gains. Incentives are at their strongest, in their view, when the regulator can identify good external benchmarks to estimate an efficient level of costs. This is consistent with our view that external benchmarking of Scottish Water against the privatised water companies in England and Wales is key to establishing the level of performance that should be required of Scottish Water.

Overall, it is clear that RPI-X regulation has been successful in encouraging companies to deliver efficiency improvements while maintaining or improving levels of service. The benefits of these improvements have been transferred to customers.

RPI-X implementation issues for the public sector

Scottish Water is a public sector organisation, which, by statute, has sole responsibility for providing water and waste water services to customers throughout Scotland. In this section we outline the factors that we have taken into account in tailoring RPI-X for use in regulating Scottish Water.

In our view, there are four principal risks that need to be addressed if customers are to receive value for money from a public sector company:

- the lack of a hard budgetary constraint;
- lack of accountability/monitoring;
- · lack of competition; and
- incentivising performance.

A strong regulatory regime can minimise these risks for customers.

¹⁷ Frontier Economics 'Incentives' published in July 2001 and included as Appendix 5 in the NAO Report 'Pipes and Wires'.

Lack of a hard budgetary constraint

Price cap regulation sets a maximum level of revenue for a company. It seeks to establish a tight budgetary constraint which requires the company's management to reduce the costs that it incurs. In the private sector, the shareholder can increase their return only if the company reduces costs faster than the rate set in the regulatory contract.

In the public sector it is important that the owner does not accept a lower level of performance than that set in the regulatory contract.

The Ministerial Guidance on principles of charging makes it clear that Ministers intend to require Scottish Water to meet its obligations under the regulatory contract.

Lack of accountability/monitoring

In private companies, management are accountable to the shareholders through the Board. Shareholders are effective in monitoring management – they have a financial interest in the company and the power to dismiss senior management. Debt providers monitor the performance of private companies closely, as do investment analysts. For the water and sewerage companies, Ofwat, the Environment Agency and the Drinking Water Inspectorate also monitor and report on performance.

Scottish Water's performance is not scrutinised to the same extent. However, we expect the scrutiny exercised by Scottish Water's Board to increase in response to the strengthened regulatory and governance framework. The creation of a tight budgetary constraint will make the management of Scottish Water more accountable for delivery of the agreed cost efficiencies, water quality and environmental standards. The new Commission, the Drinking Water Quality Regulator and the Scottish Environment Protection Agency will monitor performance closely. This will serve to increase the accountability of management.

Lack of competition

Even the threat of competition can bring benefits to customers. However, most activities in the water and sewerage business are natural monopolies, and the impact of 'in-the-market' competition¹⁸ is likely to be limited. The pressure of price cap regulation is likely to encourage a company to see best value in service delivery (whether contracted out or not) and in financing.

We have used comparative competition (ie benchmarking with the companies in England and Wales) to propose charge caps in this draft determination.

Scottish Water does not face competition for its financing, but the Water Services etc. (Scotland) Act 2005 does strengthen the regulatory regime. It also establishes a framework for competition in retail services – the one area of the water and sewerage business that can reasonably be made competitive.

Incentivising out-performance

It is important that the benefits of any out-performance, that is encouraged by RPI-X regulation are shared in an appropriate way. The periodic resetting of charges ensures that customers benefit in the medium term. We have to consider how to set appropriate incentives for Scottish Water to out-perform the regulatory contract.

In the private sector model, companies will seek to maximise shareholder returns. Regulators can therefore rely on the fact that companies will be subjected to pressure from shareholders to out-perform the regulatory contract.

In their Ministerial Guidance, Ministers recognised the importance of the tight budgetary constraint to the regulatory contract. This ensures that management are subject to a similar pressure to reduce costs.

Customers would expect the Scottish Water Board to link managerial incentives to the level of performance required under the regulatory contract. At the current time there is considerable stakeholder scepticism about management bonuses. While there may be a case for increases in performance related bonuses, this can only be implemented successfully in response to sustained improvements in performance and greater transparency in the award of the bonuses that are currently available.

^{18 &#}x27;In-the-market' competition exists where there are genuine markets for the separate business activities that are conducted by a water and sewerage undertaker.

In our second open letter to the Scottish Ministers, we outlined our view that any out-performance should be returned to customers. We also suggested that bonuses should be linked to the extent of any such out-performance.

The letter also proposed that stakeholders consider using out-performance in the 2010-14 regulatory control period to create a financial buffer against operational shocks.

Why incentive-based regulation is right for the Scottish water industry

In the context of regulated utilities, incentive regulation has been defined as "the use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals". ¹⁹ It is important to emphasise that both rewards and penalties are critical to the success of charge cap regulation.

As part of its 2004 price review²⁰, Ofwat listed the general criteria that it considered should apply for incentive mechanisms. Ofwat stated that the mechanism should:

- be in the long-term interests of customers;
- offer meaningful and worthwhile rewards for genuine out-performance;
- offer adequate penalties for underperformance;
- provide timely rewards and penalties;
- stimulate continuous improvements;
- be known in advance;
- be straightforward in concept;
- follow simple rules;
- be simple to apply; and
- avoid retrospective changes.

We believe that these criteria are as relevant to the public sector as to the private sector water industry. Our use of an adapted RPI-X approach is consistent with these criteria.

Table 3.1: Criteria for an effective framework for incentives

Criteria	How well does RPI-X fit the criteria?			
In the long-term interests of customers	Good. It is widely agreed that RPI-X works well in incentivising firms to improve efficiency in operation and investment. There are risks that firms may seek to cut corners in service delivery, but proper scrutiny from regulators and customer committees should reduce this risk			
Meaningful and worthwhile rewards for genuine out-performance	Good. Regulated companies in the UK have improved their efficiency. This suggests that regulated firms believe the benefits to be worthwhile. The context of 'rewards' for a public sector company may be different.			
Adequate penalties for underperformance	We are not aware of any evidence that shows that the penalties for underperformance are inadequate.			
Timely rewards and penalties	Acceptable. A regulatory period of four to five years ensures that the incentive framework can reward (or penalise) managers who are responsible for out-performance (or underperformance). The period is not so long that there is an inordinate delay in transferring the benefit to customers.			
Stimulate continuous improvements	Good. This can be further enhanced by implementing a rolling incentive mechanism.			
Known in advance	Good. The targets for the regulatory control period are set out in advance. The mechanism is well understood by all stakeholders.			
Straightforward in concept	Good. The concept is relatively straightforward. Companies are motivated to meet and beat the targets set by the regulator.			
Simple rules	Acceptable. In its initial form, simplicity was one of the merits of the framework. However, the rules have inevitably become increasingly complicated.			
Simple to apply	Acceptable. No new information that is not already collected either during the initial price setting or through ongoing monitoring is required. The rules are well documented.			
Avoid retrospective changes	The incentive framework relies on consistency and transparency. These are two of the Better Regulation Task Force Principles that we have adopted.			

Summary

There is clear evidence that RPI-X has brought benefits to customers in private sector regulated industries. These benefits include lower prices and improved levels of service.

We have also explained how the incentives for out-performance of targets are different in the private and public sector models. We believe, however, that the strengthened governance and regulatory framework

¹⁹ Lewis, Tracy and Garmon, Chris 'Fundamentals of incentive regulation'. PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

created by the Water Services etc. (Scotland) Act 2005 has ensured that the management of Scottish Water is under a similar pressure to perform.

The benefits of RPI-X incentive-based regulation in the water industry in Scotland are as follows:

- Customer benefits through reduced charges, increased investment and improved levels of service.
- Benefits to other stakeholders, for example through more efficient use of investment.
- Consistency with the approach for companies in England and Wales, allowing improved benchmarking of costs and assessment of the scope for further efficiency.
- It is a well understood and well regarded mechanism that is consistent with the Better Regulation Task Force's principles of transparency and accountability.

In Chapter 4 we examine recent developments in the use of RPI-X in the UK and their relevance to the water industry in Scotland.

Section 1: Incentive-based regulation in the public sector

Chapter 4: Recent developments in the UK utility sector

Introduction

In this chapter we explore how RPI-X regulation has developed in the past 20 years and how regulated companies have responded to RPI-X regulation. In particular, we review the Ofgem and Ofwat price reviews during the period 1995 to 2000.

It appears that in the earlier price reviews, the scope for cost reduction has generally been underestimated. More recently, however, regulators have set tougher price controls. Companies have responded by attempting to 'sweat their assets' and reduce their cost of capital.

It is important that we draw on this experience in setting an appropriate framework for regulating the public sector water industry in Scotland.

Developments in regulation in the second half of the 1990s

By the mid 1990s it became clear that some companies had overestimated the costs they would incur. In considering this issue, it is instructive to consider the events of previous price reviews. We summarise below the response by OFFER²¹ to events concerning a takeover bid for Northern Electric in 1995, and examine the Ofwat price determinations of 1994 and 1999.

Northern Electric

In August 1994, OFFER conducted a price review of the electricity distribution companies in Great Britain. The price review required price reductions ranging from 11%-17% in the first year (1995-96), followed by an average cut of RPI minus 2% over the following four years.

A few months after the price control results were announced, one of the distribution companies, Northern Electric, was the subject of a £1.2 billion takeover bid. As part of its response to this bid, Northern Electric proposed to issue special dividends and shares in the National Grid Company (which was owned by the

distribution companies but about to be floated on the Stock Exchange) to shareholders. Northern Electric intended to finance this package by obtaining bank loans, which would have raised its level of gearing to 225%.

Northern Electric's reaction to the proposed takeover exposed the financial strength of the regional distribution companies. As a result, OFFER took the unprecedented decision to review the price control package that it had established less than a year earlier. In July 1995, OFFER announced that prices were to fall by a further 11%-14% and that the X factor was to increase from 2% to 3% for each of the three years until 1999-2000.

Ofwat price determinations

In its 1994 price review, Ofwat set price limits which allowed the water and sewerage industry to invest around £14 billion in the period 1995-2000. The efficiency targets that Ofwat set averaged between 3.3% to 4.3% for maintenance and enhancement expenditure for both water and waste water services. Ofwat further assumed that technical progress would allow the companies to deliver capital projects for 1% less each year.

Subsequent analysis by Ofwat²² has indicated that efficiency savings in the period 1995-2000 were higher than 10% for water service capital investment and above 20% for waste water service.

In its final determinations for the period 2000-05, Ofwat allowed the industry to invest around £15.6 billion. Efficiency targets ranged from 6%-11.5%. Ofwat again assumed that technical progress would allow the companies to deliver capital projects for less each year. The scope for such improvement was estimated to be 1.4% per year for capital maintenance and 2.1% per year for enhancement expenditure.

A review of the performance of the water industry during the 2000-05 price control period suggests that the companies have continued to improve efficiency

²¹ Office for electricity regulation, later merged with the Office for gas regulation to create Ofgem.

Ofwat publication 'Financial performance and capital expenditure of the water and sewerage companies in England and Wales 2003-04', page 46.

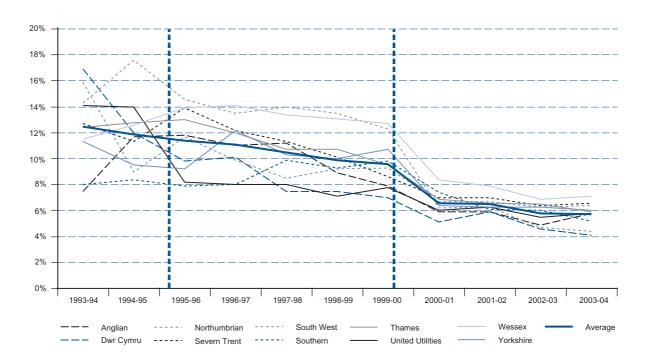
faster than their regulatory contracts required. Current figures²³ show that the companies have achieved efficiencies in water services of around 5% and for waste water services of around 10%.

It appears that before both of these price reviews the water and sewerage companies overstated their required capital spend. If Ofwat had not carried out a detailed assessment of the companies' investment requirements and set efficiency targets, then the companies would have out-performed by even more. This would have further increased returns to shareholders.

Both Ofgem and Ofwat set more challenging targets for companies in the second half of the 1990s. This reflected, at least in part, a response to the companies' performance in the first half of the 1990s.

The reduction in post-tax rates of returns for each of the water companies is illustrated in Figure 4.1.

Figure 4.1: Actual post-tax rates of return (operating profit/RCV) for water and waste water companies in England and Wales 1993-94 to 2003-04



²³ Ofwat publication 'Financial performance and capital expenditure of the water and sewerage companies in England and Wales 2003-04', pages 46-47.

The regulators' ability to set effective price controls requires a detailed understanding of the proposed capital investment programmes. Regulators have increasingly focused on defining the outputs that companies are required to deliver and have improved the way they monitor output delivery.

Criticisms of the RPI-X approach

In recent years, industry commentators have made a number of criticisms of the RPI-X mechanism for regulation. These fall into four main categories:

- the impact on investment;
- · the strength of incentives;
- · financing of investment; and
- the impact of risk.

The impact on investment

Some observers, for example Dr Dieter Helm²⁴, have raised concerns that the RPI-X mechanism promotes short-term planning by utilities. This is seen to be at the expense of long-term investment that would sustain efficiency improvements and, over time, be more beneficial to customers.

In its July 2001 report²⁵, the Better Regulation Task Force also voiced concerns about long-term investment in the regulated industries, noting that "there is a view that the financial incentives engendered by RPI-X may inhibit investment for the future".

The argument is that while companies can improve profitability immediately by cutting operating expenditure, it takes longer for the benefit of capital expenditure to feed through to higher profits.

It is important that companies have an appropriate incentive to invest in their networks. Without such incentives, companies may continue to focus on 'sweating their assets' and maximising the available short-term return. This could ultimately lead to reductions in

customer service and may also increase the whole life costs of maintaining the network. It could take many years of high investment levels to recover network performance to a satisfactory level. Inadequate incentives for long-term investment may therefore lead to regulated utilities simply storing up problems for the future.

In the National Audit Office 'Pipes and Wires' report²⁶ it was noted that:

"The regulatory regimes in the UK appear highly successful in promoting reductions in operating expenditure and perhaps slightly less successful in promoting quality improvements and capital cost reductions."

It went on to state:

"Capital cost efficiencies can't be subject to effective incentive regimes while the size of investment alone, rather than the outcomes, is seen as the main leading indicator for quality provision. Both Ofgem and Ofwat have recognised this by focussing on output measures of investment performance."

The NAO review concluded that there was no evidence that investment had been inadequate or that the networks had deteriorated as a consequence of RPI-X regulation. The report did suggest, however, that there are "indications that the level of investment may have to rise in future to deliver the outputs the public expect". On the issue of the risk to investment, the report concludes that regulators should:

- "consider publicly identifying the improvements in outputs and outcomes that they are willing to allow companies to invest in; and
- encourage network companies to develop risk management models to assess the potential impact of deterioration in asset performance on future levels of service."

To address these issues, we have required Scottish Water to submit a detailed investment programme, outputs of which are defined at a project level.

²⁴ Dr Dieter Helm 'Memorandum on environment, food and rural affairs' submitted to the UK Parliament, 17 October 2003.

Better Regulation Task Force, Economic Regulators, July 2001, Para 6.2.

²⁶ NAO - Pipes and Wires: Report by Comptroller and Auditor General - HC723 - Session 2001-2002, 10 April 2002.

The strength of incentives

Under the RPI-X mechanism, regulated companies have an incentive to achieve efficiency gains because they can keep the benefits of out-performing their regulatory contract for a specific period. After that period, the regulator can pass the benefits of this out-performance to customers.

In the early years of utility regulation, regulators passed the benefits of out-performance to customers at the start of the next regulatory control period. This meant that incentives to improve were strongest in the early years of a review period and became less strong towards the end of the regulatory control period. This was because companies only obtained the benefit of efficiency gains for the remaining part of the regulatory control period. This issue is often referred to as the 'periodicity' problem.

Regulators have responded to this issue. They are increasingly allowing companies to keep the benefits of any out-performance for a fixed period of time, regardless of when those savings were actually realised. It is hoped that this will remove the incentive for companies to defer the implementation of proposed efficiency gains until after the next price review.

Ofwat sought to strengthen the incentives for the companies in England and Wales by introducing a 'rolling incentive mechanism'. Companies are now allowed to keep the benefit of out-performance of their regulatory contract for a full five-year period, irrespective of when the savings are made. The benefit of any out-performance is passed to customers five years after they were first realised.

it is, however, not clear that these incentives would have a similar effect in either the public or the not-for-dividend sectors.

Financing of investment

It is important that price review settlements provide an appropriate return for owners and investors. If the allowed return is too high then customers will pay too much. If the return permitted is too low, investors will be

discouraged from providing funds. Any uncertainty surrounding the level of return that the regulator will allow is likely to increase the returns that investors require in order to finance new investment.

Regulators seek to minimise uncertainty by ensuring that price reviews are transparent and that they do not hold any surprises for stakeholders. Regulators now routinely publish in advance the methodologies they will use for the price review and the financial models on which the price review calculations will be based.

The effect of uncertainty in the regulatory process was made clear by OFFER's reaction to the Northern Electric situation. OFFER's announcement that it was intending to amend the original price control package is said to have resulted in a £3.5 billion drop in the market value of the share price of the 12 distribution companies.

Market reaction is clearly not a consideration in regulating a public sector company. Nonetheless our approach to the Strategic Review of Charges 2006-10 has been fully transparent and we have sought to ensure that there are no surprises for customers, stakeholders or Scottish Water.

The impact of risk

The NAO recommended that regulators should take the following steps to minimise any risks associated with RPI-X regulation:

- specify clearly and well in advance which information they will need from companies during price reviews and gather as much of the information as is cost-justified on an annual basis; and
- publish an evaluation of their completed price reviews

As part of the Strategic Review of Charges 2006-10, we have published a detailed methodology which included a comprehensive list of our information requirements from Scottish Water. The information that has informed our Review includes:

- the Annual Return submissions provided by Scottish Water;
- Scottish Water's business plans; and
- monthly and quarterly returns covering financial and investment information.

Attempts to lower the cost of capital

Some regulated companies responded to the tougher regulatory settlements at the end of the 1990s by focussing on the cost of capital. These companies sought to lower their effective WACC by increasing their level of debt. Interest on debt is an allowable expense for tax purposes and many companies felt that this allowed them to lower their WACC. Lower interest rates and more easily available debt finance in recent years have increased the attractiveness of this approach.

The Department of Trade and Industry prepared a report in October 2004 entitled 'The drivers and public policy consequences of increased gearing'. This provides a useful analysis of the changes in gearing ratios that have taken place across various utility sectors.

At the time of privatisation, the utilities were set up with zero, or very low levels, of debt on their balance sheet. This was intended to encourage the companies to borrow money to finance much needed investment in the networks in a way that would avoid increasing charges for customers.

After an initial modest increase in gearing in the early to mid 1990s, some of the regulated utilities increased their level of debt funding significantly in the late 1990s, such that average gearing ratios are now in the region of 60%.

The reasons why the companies chose to increase their debt levels, include the following²⁷:

 A desire to create value for shareholders with extra resources, particularly after the early, easily achievable, efficiency gains had been made.

- For favourable taxation treatment debt interest is a tax deductible expense and so helps to lower the effective cost of capital.
- To reduce business risk it is believed that the existence of higher levels of debt may put pressure on regulators to reduce the severity of future price controls.
- For agency and information effects the taking on of debt is considered to send a credible signal to the market that the company is confident that it can repay that level of debt.
- To reduce risk in a sector with low technical progress, and with stable cash flows and expenses, debt may better match the liabilities incurred. This may help force management of a highly geared company to concentrate on core activities.

Both Ofgem and Ofwat now accept that gearing ratios of more than 50% are acceptable and can be consistent with maintaining investment grade status for debt.

Regulators have increasingly used financial ratios agreed with the credit rating agencies to ensure that their companies maintain investment grade status for their debt. Price cap regulation has therefore contributed to the development of more efficient (lower cost) capital structures.

The rise of 'mutuals' – Yorkshire Water and Welsh Water

In January 2000, the Board of Kelda Group plc (Yorkshire Water) proposed to separate ownership of its assets from operation of those assets. The proposal involved establishing a community 'not-for-profit' mutual company that would be 100% debt financed. It was envisaged that the mutual company would award all of the initial operating contracts to Kelda Group plc and that competitive tendering procedures for the contracts would be introduced on a phased basis.

After careful consideration of the proposals, Ofwat said that the following conditions needed to be satisfied before the mutual company could be established:

²⁷ The benefits of increased gearing on the cost of capital for various water companies in England and Wales are noted at page 15 of the DTI's report.

- the complete independence of the proposed mutual from Kelda Group plc;
- adequate arrangements to achieve and maintain accountability to the members of the mutual;
- the contracts for services would have to be procured in such a way as to ensure that the prices achieved were truly competitive; and
- proper provision would need to be made for maintaining serviceability to customers.

Kelda Group plc's proposals were not consistent with these conditions and furthermore it may not have been in the interests of the Kelda Group to seek to satisfy these conditions. Although Kelda Group did not pursue its proposals, its process represented an important development in water regulation. Ofwat had now set out the conditions that companies would have to satisfy if they were planning to establish a wholly or mainly debt financed company.

In November 2000, Glas Cymru agreed its purchase of Welsh Water from Western Power and Distribution. In structuring this transaction, the senior managers at Glas Cymru had taken detailed account of the conditions set out by Ofwat for the creation of the Yorkshire Water mutual. Glas Cymru is a not-for-dividend private company which is wholly debt financed. The wholly debt financed company limited by guarantee was given the support of the Welsh Assembly and Ofwat in July 2001. The Glas Cymru model is considered in more detail in the next chapter.

Summary

This chapter has summarised the criticisms of RPI-X regulation that industry commentators have raised in recent years, particularly in relation to the incentives for capital investment. These criticisms have been the subject of detailed scrutiny, for example by the NAO. The benefits of RPI-X regulation have been found significantly to outweigh the disadvantages. We and other regulators have taken steps to improve incentives to invest appropriately. This is in line with the NAO's recommendations.

This chapter has also highlighted key developments in the UK utility sector:

- tougher price controls resulting from better regulatory information and closer scrutiny of performance;
- a move to detailed monitoring of capital investment outputs (and inputs) by regulators to ensure that claimed capital efficiencies are not at the expense of investment delivery;
- the introduction of a range of measures, such as rolling incentive mechanisms, to improve the incentive properties of RPI-X;
- increased transparency of the regulatory process to provide fewer surprises for regulated companies;
 and
- a greater use of 'highly geared' financial structures for regulated monopoly businesses – the increased use of debt funding has been mainly driven by the desire to reduce the cost of capital.

The impact of these developments on the Strategic Review of Charges 2006-10 is examined in later chapters.

Section 1: Incentive-based regulation in the public sector

Chapter 5: Case studies – Glas Cymru and the Post Office

Introduction

In previous chapters we discussed the use of RPI-X regulation in the UK. Under RPI-X regulation, the focus of the regulated company will be on minimising its costs, including the cost of capital.

It appears that the 'not-for-profit' debt-funded Glas Cymru (which owns Welsh Water) has reduced the cost of capital and improved the level of service provided to customers. The structure and governance of Glas Cymru could provide some useful lessons for Scottish Water. Neither company has shareholders, yet both are required to match or exceed benchmark levels of service.

In this chapter we examine the Glas Cymru model and its governance. Glas Cymru represents an interesting case study for three reasons:

- the way risk is managed;
- the company's emphasis on transparency; and
- · the use of incentives.

The Post Office provides an interesting case study about the importance of a financial buffer.

First, it is interesting to consider a brief history of Welsh Water and the reasons which led to the creation of Glas Cymru.

Events leading up to the creation of Glas Cymru

At privatisation in 1989, water and waste water services in Wales were the responsibility of Welsh Water. In the early years after privatisation, the holding company (later renamed Hyder plc) diversified beyond its core business. Some of these activities, for example Hyder Consulting, were extensions of water services activities. Other diversifications, such as the purchase of hotels

and a healthcare procurement company, demanded a different set of management competencies from the water industry. These other activities were partly funded by Welsh Water's core activities. They also distracted management attention away from delivering core water and waste water services.

The purchase of SWALEC, an electricity distribution company, in 1996 significantly increased Hyder plc's debt. Hyder had expected to make savings by combining the network operation and asset management of the two utility businesses. The two regulated businesses performed adequately but the level of debt significantly reduced the Group's ability to withstand financial or operational shocks.

The 1999 price determinations for both the electricity distribution and water industries were relatively demanding. These settlements, combined with the Government's decision to levy a 'windfall tax', placed Hyder in an untenable position.

In 2000 Nomura, a Japanese Investment Bank, made an offer to purchase the Hyder Group. Western Power Distribution, an American electricity company, also made a rival bid. After a long battle, the Panel on Take-overs and Mergers required the submission of sealed bids and, as a result, WPD acquired the Hyder Group.

Perhaps not surprisingly, WPD had no interest in the water business. It attempted to sub-contract these operations to United Utilities but the sub-contract was successfully challenged by Severn Trent. WPD therefore needed to find an alterative arrangement.

Two of the Board members of Welsh Water, Nigel Annet and Chris Jones, developed the idea of selling Welsh Water to a not-for-profit company limited by guarantee. Lord Burns of Pitshanger, former Permanent Secretary at the Treasury, agreed to chair the new company. Glas Cymru was established in March 2000. It bought Welsh Water from WPD for £1.85 billion, 95% of its regulatory capital value, in May 2001.

The structure of Glas Cymru

Glas Cymru's purchase of Welsh Water was supported by the Welsh Assembly but required approval by Ofwat. There were similarities between the Yorkshire mutual proposed by Kelda plc and Glas Cymru's purchase of Welsh Water.

In the previous chapter we explained how Ofwat had expressed a number of concerns about Yorkshire Water's proposal and ultimately did not allow it to proceed. Ofwat was concerned that a mutual company would not be subject to the same pressure to maximise profit. Customers have no real financial interest in the company, but they bear the risk of a financial shock or general corporate failure. Ofwat was concerned about how a mutual company would be able to protect customers from those risks.

Ofwat also had concerns about the effectiveness of management incentives in a not-for-profit company. Standard management incentives, which seek to align the interests of management and shareholders, do not apply in a mutual model.

Glas Cymru sought to learn from Ofwat's objections to the Yorkshire mutual and to reassure Ofwat in its own proposals to the regulator. It argued that its model was different and that the model addressed Ofwat's concerns about the mutual proposal²⁸. Specifically, the Glas Cymru proposals included the following points:

- Ownership of Welsh Water would be vested in a company limited by guarantee. This avoided the requirement for customers to give their consent to the proposal.
- Its financial structure would create a financial buffer (increasing reserves and arranging an automatic stand-by credit) that would be sufficient to meet its residual risks. These reserves would be established before the company issued rebates of customers'

charges. This would insulate customers from the impact of a financial shock.

- It would subject itself to the London Stock Exchange's reporting requirements, principles of good governance and code of best practice, and would act at all times as if it were a listed company.
- It would introduce a transparent, performancedependent incentive scheme for both the executive directors and staff of Glas Cymru. This would draw on the principles of the Cadbury and Greenbury reports²⁹.

Ofwat issued a consultation on Glas Cymru's proposal to acquire Welsh Water. Although Ofwat recognised the benefits of increased customer and environmental focus from a not-for-profit structure³⁰, it continued to be concerned:

- about the risks that removing equity-based limited liability would bring³¹;
- that the reserves which Glas Cymru proposed to establish would not provide a sufficient cushion to protect customers from any operational or financial shocks; and
- that a company which does not have to respond to shareholders' demands may not perform well in the long term.

Ofwat agreed to approve Glas Cymru's proposal to purchase Welsh Water if Glas Cymru could meet the following conditions:

- 1. Agree to licence modifications proposed by Ofwat, restricting it to operating core functions only.
- 2. Give a public commitment to reduce its charges for customers.
- 3. Make its management incentive scheme public.

²⁸ See Glas Cymru's open letter to the Director General of Water Services, 3 November 2000.

²⁹ Cadbury Report published 1992 and Greenbury Report published 1995.

Details of this consultation can be found on Ofwat's website at www.ofwat.gov.uk. See in particular Ofwat's position paper of 31 January 2001 at the following link: http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/glas_decision_31jan.pdf/\$FILE/glas_decision_31jan.pdf

³¹ The benefits of equity based limited liability were revealed in 1995 when Yorkshire Water's shareholders, rather than its customers, bore the impact of £250 million of drought-related costs.

- Provide a public statement on its commitment to limit its activities to the single purpose of providing water and sewerage services.
- 5. Give a public commitment to appoint its members on the basis of best practice.
- Confirm that the rights proposed for bondholders would not impede the Director's duties under the Water Industry Act 1991.

Glas Cymru agreed to all of these conditions. It committed to build up reserves of £350 million, gave bondholders step-in rights and sub-contracted operational and customer service activities. Glas Cymru finally purchased Welsh Water in 2001.

Glas Cymru's key features

In this section we consider four key features of the Glas Cymru model which we believe are particularly relevant to Scottish Water:

- Welsh Water's focus on its core activities;
- the transparent performance-related incentive framework for executive directors;
- its focus on transparency; and
- the management of risk.

We believe that the Scottish water industry can learn from the apparent success of Glas Cymru's management incentive scheme and from the creation of a financial buffer.

Focus on core activities

Ofwat added a condition to Welsh Water's licence which prevents it from diversifying beyond its core activities of water and waste water services in Wales. This condition reflected the poor diversification record of Hyder plc, Welsh Water's former parent company.

The credit rating agencies believe that Welsh Water's focus on its core business has reduced its risk profile. This has an impact on its credit rating and on the cost at which it can borrow. The provision of water and waste water services is generally considered to be a low risk activity. This licence condition not only helps to minimise the risks to which Welsh Water's customers are exposed, but also reduces its cost of capital. This contributes to the creation of financial reserves and allows Welsh Water to offer customer rebates³².

Management incentives

Welsh Water has two management incentive schemes, a short and a long term one. These schemes operate in parallel to one another and are both explained in detail below

The management incentive scheme provides each director with the opportunity to earn a bonus of up to 80% of their base salary.³³

In the short term, 50% of the annual bonus of up to 80% of basic salary is assessed against delivery of customer service targets and 30% is assessed against the annual financial performance of the company³⁴.

Customer service performance is measured by reference to the overall performance assessment that is published by Ofwat.³⁵ The award of a bonus is determined by the performance of Welsh Water relative to that of the other water and sewerage companies. The remuneration committee gives credit for both an improvement in the overall performance assessment score and in the relative performance score of Welsh Water. A deterioration in either the absolute or the relative performance of Welsh Water would be penalised.

³² For example, Welsh Water's Annual Report and Accounts for 2003-04 states that customers received bill rebates worth £12 million. These reports are available on Welsh Water's website – www.dwrcymru.co.uk

³³ Details of the bonuses for Welsh Water's Directors can be found in the company's Annual Reports for 2003-04, which are available on its website at: www.dwrcvmru.com.

All annual bonus payments are non pensionable.

Included within the overall service assessment are non-financial performance measures for: water supply - interruptions to supply, restrictions on supply and drinking water compliance; sewerage measures - sewage flooding incidents and quality of effluent discharges to the environment; and customer service performance - speed of response to telephone and written billing enquiries and handling of written complaints.

Financial performance is measured against EBDA (earnings before depreciation and amortisation) cash-flow targets. Each year, Welsh Water's remuneration committee determines appropriate cash-flow targets and the level at which the maximum bonus would be paid, and the level below which no bonus would be paid.

In September 2003, directors received an annual bonus for the year equivalent to 66% of salary. They received the maximum pay-out for customer service performance (50%), and received just over half of the bonus available for financial performance (16%).

The directors are also eligible for a long-term performance related bonus scheme. This is linked to the company's long-term financial performance. Bonuses are paid on the basis of two measures:

- increases in the company's level of 'reserves'; and
- changes in the rating of each class of the company's bonds.

We discuss the importance of reserves in the following section. Broadly speaking, however, improved performance and efficiency in the way the business is financed and operated will be captured by growth in its financial reserves. Glas Cymru has made a public commitment that the main use of reserves, over time, will be to deliver lower bills to customers of Welsh Water. The long-term incentive scheme therefore aligns the financial interests of the directors and senior managers with those of customers.

The long-term incentive scheme has operated over the four-year period to 31 March 2005. The size of the bonus that is awarded will reflect the average level of reserves over the six months prior to 31 May 2005. The award of a bonus will reflect a pre-determined sliding scale from a 'threshold' up to a 'maximum' level of performance. This award may then be adjusted (up or down) to reflect any change in the credit rating of each class of bonds.

Half of any award earned under the long-term bonus scheme will be payable in July 2005. The remaining half of the bonus will be deferred for two years. It will be paid

on the second anniversary of the original award with no further performance conditions. If a director were to leave the company before that date (other than for retirement, redundancy, or for reasons of ill health) the unpaid part of any award would be forfeited.

The latest forecast of reserves at 31 March 2005 would, based on the latest rating of the company's bonds, result in directors receiving a long-term incentive bonus payment of around 100% of basic salary. This recognises Glas Cymru's achievements over the past four years.

This two-tiered bonus scheme clearly aligns the interests of executive directors with those of customers. The level of bonuses paid reflects objective measures of the service level provided to customers and improvements in Welsh Water's financial performance. Ultimately, improved financial performance will be passed back to customers in the form of lower bills.

We have consistently stated that the regulatory contract should be seen as a minimum acceptable level of performance. We consider that objectively measured, transparent management incentive schemes, such as the one that is operated by Welsh Water, are in the longterm interests of customers.

Transparency

One of Glas Cymru's most striking features is the transparency that surrounds its operations. The company's website contains all of the important financial information, including:

- statutory returns;
- the strategic business plan;
- the annual report;
- details of the directors' bonus scheme and amounts paid out under it;
- the procurement plan;
- information on bond issues;

- reports on the delivery of investment;
- reports on health and safety;
- information on billing and tariffs; and
- a code of practice.

This transparency allows public and regulatory scrutiny of all of the company's operations. Such scrutiny may replace (at least to some extent) the scrutiny of shareholders and investment analysts. It also reassures customers that senior managers deserve the bonus payments that have been made.

We believe that a similar commitment to transparency would benefit Scottish Water's customers. Glas Cymru's commitment to transparency is equally applicable to the public sector model. We continue to believe that the detail of Scottish Water's management incentive scheme needs to be published in advance so that stakeholders can understand the performance targets. These targets should be fully aligned with the regulatory contract.

Risk management

We have already described how Glas Cymru has sought to create a financial buffer to protect customers from any operational or financial shock. This replaces the normal equity 'cushion'. Glas Cymru has established a financial reserve of £350 million. This financial buffer reduces Glas Cymru's cost of capital by improving the company's credit rating. Even more significantly, however, it protects customers from the impact of a financial shock. If there were to be an unexpected event, such as a drought³⁶, the cost of that event can be met from reserves rather than by an increase in prices.

Review of Glas Cymru's performance

Welsh Water's performance appears to have improved since its purchase by Glas Cymru:

- · the level of service to customers has improved;
- · prices have been cut; and
- efficiency has improved.

Level of service to customers

In its annual publication 'Levels of service for the water industry in England and Wales'³⁷, Ofwat presents an overall performance assessment of each company's customer service performance.

Table 5.1 shows the overall performance scores of the water and sewerage companies in England and Wales³⁸. In 1999-2000 Welsh Water was ninth out of ten in this overall performance assessment. By 2001-02 it had jumped to third and was first in 2002-03. In 2003-04 it was in second place.

Table 5.1: Ofwat's assessment of customer service levels

	2001-02	2002-03	2003-04	
Anglian	370	395	421	
Welsh	381	405	419	
Northumbrian	417	379	411	
Severn Trent	371	394	408	
South West	330	329	374	
Southern	355	384	391	
Thames	379	391	383	
United Utilities	332	336	394	
Wessex	351	403	411	
Yorkshire	397	403	409	

Price cuts

When it bought Welsh Water in 2001, Glas Cymru promised to reduce customers' bills once it had established sufficient financial reserves. Glas Cymru has made significant progress in building up its reserves because it has been able to reduce its cost of capital.

As there was in Yorkshire in 1995 which is estimated to have cost Yorkshire Water £250 million.

³⁷ Which is available from Ofwat's website at: www.ofwat.gov.uk.

The methodology for calculating these scores was changed in 2000-01, so no information is available for that year or for previous years.

In its 2003-04 annual report, Glas Cymru reports a total interest cost of £142 million, against a regulatory capital value of approximately £2.6 billion. This gives it a nominal pre-tax total cost of capital of just under 5.5%. RPI in 2003-04 was around 2.5%. This suggests a post-tax real cost of capital for Welsh Water of less than 1.4%. This is considerably lower than the rate of return allowed by Ofwat, which was set at 4.75% real post-tax for the 2000-05 regulatory control period.

This saving has allowed Welsh Water to build up the £350 million reserve agreed with Ofwat. Continuing out-performance of the regulatory contract has allowed a £9 reduction in average household customers' bills in 2003-04, and again in 2004-05. Following Ofwat's announcement of water and sewerage price limits for 2005-10, Welsh Water announced that it intended to double the dividend by reducing the average household bill by £18 until 2010.

Efficiency improvements

Table 5.2 shows Welsh Water's relative efficiency compared with the other water and sewerage companies in the period since Glas Cymru acquired Welsh Water³⁹.

Table 5.2: Welsh Water's relative efficiency ranking

	2000-01	2001-02	2002-03	2003-04
Water service efficiency ranking				
Operating efficiency	22	22	20	16
Capital maintenance efficiency	9	6	13	12
Sewerage service efficiency ranking				
Operating efficiency	8	8	10	9
Capital maintenance efficiency	3	3	3	2

Performance in water operating costs has improved and the level of performance in other areas has been maintained.

The experience of the Post Office

The Post Office provides another interesting example, within the public sector, of the importance of establishing a financial buffer. In recent years this buffer has helped ease the transition to a competitive postal services market.

The Post Office (including the telephone and mail services) became a public corporation as a result of the 1969 Post Office Act. As a public corporation, it was not allowed to pay dividends to the Government. Instead, the Government required a proportion of any retained profit to be used to purchase government securities or 'gilts'. These gilts remained on the balance sheet of the Post Office, but could only be used at the direction of UK Ministers.

While incorporation of the Post Office into the Royal Mail Group plc in 2001 made distribution of the gilts to the UK Government possible, the reserve scheme remains. The 'Mails Reserve' was endorsed by the 1999 White Paper on postal reform⁴⁰. This White Paper set a target that 40% of retained earnings should be invested in gilts⁴¹. There is also a minimum value of gilts that the Post Office is required to purchase each year. This limit has been set so that public expenditure planning is not affected by fluctuations in the trading of the Post Office. The White Paper also set out the circumstances where Ministers would use the financial reserve that has been accumulated.

Until relatively recently, the Post Office was highly profitable. The current value of gilts held by the Post Office is well over £1 billion. This is a very significant sum relative to any financial or operational risk that the Post Office is likely to face. The Post Office is a people-intensive (rather than an asset-intensive) business. This is likely to reduce the relative impact of any single risk on the business as a whole. The Post Office employed more than 210,000 people in 2004. The value of this financial buffer is relatively small in relation to the Royal Mail's turnover (£8.6 billion in 2004). It is also worth noting that this buffer has been accumulated over more than three decades.

³⁹ Source: Ofwat's unit cost and relative efficiency reports 2002-03 and 2003-04.

⁴⁰ Entitled 'Post Office Reform: A World Class Service for the 21st Century' published on 8 July 1999 and available via the DTI's website at this link: http://www.dti.gov.uk/postalservices/white_paper.htm

⁴¹ In 2003 the Secretary of State for Trade and Industry, Patricia Hewitt, issued a direction under Section 72 of the Postal Services Act 2000, updating this gilt scheme and naming it 'Mails Reserve'.

It is clear that the creation of this financial buffer over a large number of years has significantly reduced the impact of operational risks on the customers of the Post Office. It would seem sensible to adopt a similar approach in our funding of the public sector water industry in Scotland.

In our second open letter to Scottish Ministers we noted:

"it could also be desirable to develop a further mechanism which could allow some of the surpluses resulting from out-performance to be retained by Scottish Water. In a similar public sector context, the Post Office established the practice of building up a discrete and separate reserve by using part of its surpluses to buy index-linked gilts. (A summary of this practice is attached as a second annex to this letter.) In this regard, it will also be important to decide how the Ministers' objective that customers do not pay twice for the same output would be implemented in practice".

If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view, such a course of action should not adversely impact on customers.

This draft determination also sets out a forecast of the likely new borrowing that will be required by Scottish Water. We have assumed that this level of borrowing would be increased only in exceptional circumstances and only if the new Water Industry Commission agrees that more borrowing is the appropriate response to the exceptional circumstance. This is not wholly dissimilar from the stand-by credit that is available to Welsh Water.

There is also much to commend the clear link between management incentives, overall financial and customer service performance, and charges to customers. The approach outlined in our second open letter would bring similar benefits to customers in Scotland.

Summary

Glas Cymru's purchase of Welsh Water is an interesting case study. Shareholder scrutiny has been replaced by a clear governance framework and a robust and transparent management incentive scheme. This incentive scheme aligns the incentives of management with the interests of customers. The scheme requires out-performance of the regulatory contract.

Glas Cymru's unique capital structure has successfully reduced the cost of capital. Out-performance of the regulatory contract (partly driven by the lowering of the cost of capital) has allowed a substantial financial reserve to be created. This reserve should help insulate the company's customers from the effects of any financial or operational shock. In the absence of such a shock, out-performance of the regulatory contract, once the targeted buffer has been reached, is available for rebates to customers.

The Post Office case study also reveals that creating a financial buffer has significantly reduced the impact of operational risks on its customers.

Section 2: The introduction of regulatory accounts

Chapter 6: The financial framework for stable prices

Introduction

This Strategic Review of Charges sets 2006-10 charges for customers which do not increase in real terms. At the same time, customers should benefit from an improvement in the underlying level of customer service and from improved public health and environmental compliance. This would require Scottish Water to improve its cost efficiency at least in line with the 2006-10 regulatory contract.

In our December open letter⁴², we explained the importance of making progress towards a framework of incentive-based regulation. We have made progress towards this by ensuring that Scottish Water faces a tight budgetary constraint in this regulatory control period. It is also important that we make progress in creating a financial buffer that would be capable of absorbing any operational shocks.

Scottish Water's Board should respond to the tight budgetary constraint by aligning the key performance indicators that it sets for the executive management with the outcome of the Strategic Review of Charges. This would be consistent with the incentive schemes that have been put in place for the management of Network Rail and Glas Cymru. The Board should also be interested in developing a buffer that would protect the organisation from any operational shocks.

The importance of the tight budgetary constraint

Regulators set price or revenue caps in order to create a tight budgetary constraint for the regulated company. Most regulated companies are subject to pressure from shareholders to out-perform the regulatory settlement. In other words, the regulator is effectively setting a minimum acceptable level of performance. In the case of Scottish Water it is important that both the owner and the Board recognise that the regulatory settlement (or contract between the regulated company and its customers) is the minimum level of acceptable performance.

Ofwat allows the privatised companies an allowed rate of return on their regulatory capital value. A company

Board may decide that it is content to increase the proportion of its regulatory capital value that is funded by debt. This may reflect the potential tax advantage of debt funding, or it may be that the owners are content to incur a higher risk and, consequently, to earn a higher return. The decision to increase debt to engineer a lower cost of capital is clearly different from a situation where the company has to take on more debt than planned (or to reduce dividends) to compensate for performance falling below the level that was agreed in the regulatory contract. The owner effectively has to decide whether to accept a lower return now or to accept a higher degree of risk for the same return while the performance issues are addressed.

It is important to note that Ofwat will not adjust prices upwards to compensate for a failure by the regulated company to meet its obligations under the regulatory contract. As a result, there is no danger that the customer will be asked to pay twice for the same promised improvements. Shareholders bear the risk. In the public sector model the risk is borne by the Scottish Executive as the de facto owner of Scottish Water. There is a clear commitment in the Ministerial Guidance on the principles of charging that they would not allow extra debt to be made available in the event of underperformance against the regulatory contract.

We have set charge caps such that if Scottish Water meets the minimum levels of performance that we set in the determination, it will be in a financially sustainable position. The levels of performance set out in the regulatory contract are mandatory, not aspirational. The Board must understand that there can be no recourse to customers in the event of a failure to deliver the agreed levels of service and investment outputs unless the causes were outside the control of management⁴³.

The regulatory capital value method of price setting does not require the regulator to fix the level of debt that the regulated company borrows. The regulator sets the conditions where a well-managed company can continue to finance its functions. A company can finance its functions by reinvesting post-tax surpluses or by adding long-term debt. However, an organisation cannot

⁴² Letter to Minister for the Environment & Rural Development, dated 2 December 2004 – available on our website www.watercommissioner.co.uk

⁴³ In this case an interim determination would be appropriate.

routinely borrow if it does not meet the minimum levels of performance agreed in the regulatory contract. This would not be consistent with its long-term financial sustainability. It would have a material adverse impact on the prospects for future charges and could also reduce the size of the affordable investment programme in future regulatory control periods.

Establishing a buffer to absorb operational shocks

At present, Scottish Water's customers are more immediately exposed than customers in England and Wales to the financial risks of the business. In England and Wales, the presence of private equity acts as a significant shock absorber, and as a result protects customers. A good example of this is the cost of the Yorkshire drought in 1995 (approximately £250 million), which had to be absorbed by the equity holders of Yorkshire Water. Other companies have experienced similar operational shocks, the cost of which has had to be borne by shareholders.

The creation of the not-for-dividend companies Glas Cymru and Network Rail required Ofwat and the Office of the Rail Regulator to think more about corporate governance. In particular, it required them to consider how to protect customers from the impact of any such operational shocks. Both Glas Cymru and Network Rail are funded by a combination of debt and retained earnings. It is critical that they maintain a robust financial position as a weakening of their financial position is likely to lead to an increase in their funding costs and a reduction in their ability to withstand an operational shock.

The options for establishing a tight budgetary constraint in a public sector model

To be fully effective, the tight budgetary constraint requires detailed scrutiny of the level of service and investment outputs that are actually delivered, as well as a limit on the resources that are available to deliver that level of service. The regulatory regime south of the border recognises this. Ofwat would adjust prices downwards for the next

regulatory control period if it believed that the agreed level of service or the agreed investment outputs had not been delivered. Such an adjustment would reduce the return available to equity holders.

In the public sector industry Scottish Water's regulatory contract sets out a minimum acceptable level of performance. This limits not only the charges that are paid by customers but also the debt that Scottish Water can access automatically.

We commissioned a report from the leading investment bank, ING Barings on how private sector disciplines could be applied to public sector lending in the Scottish water industry. ING Barings outlined the importance of debt draw-down procedures. We would advise that each time Scottish Water asks to borrow (within its agreed facility), the Scottish Executive should seek assurances that it is on track to at least match the regulatory contract. It may also be appropriate to seek confirmation (perhaps annually) from the Commission and the quality regulators that the agreed level of service and the investment outputs have been delivered.

We would also advise the Scottish Executive to consider having regular meetings with non-executive Directors at which they seek confirmation that the non-executive Directors believe that Scottish Water is on track to meet its obligations.

Options to establish a buffer to withstand operational shocks

There are four ways in which we could develop a buffer to withstand operational shocks. These are to use the revenue flexibility generated by out-performance of the regulatory contract to:

- improve financial ratios by borrowing less;
- buy a safe, liquid asset;
- pay dividends to a contingency fund held by the Scottish Executive; and
- accelerate the investment programme.

Rigorous monitoring would be essential in each case. Customers want to be assured that good performance in one year is not likely to be followed by a less committed effort in subsequent years of the regulatory control period. It would be important to emphasise that this out-performance stays as customers' money and that it is in effect an insurance policy against an unexpected operational shock. The extent of out-performance should be measured by the regulators and confirmed by the Reporter. This out-performance should be ring-fenced to create the buffer.

We suggest that a clear target for this buffer should be established (at perhaps around £300 million). We also suggest that it is made clear that any further out-performance would be distributed to customers in the form of lower charges than would otherwise have been necessary. Until there is broad agreement on the terms for establishing this buffer, we believe that any out-performance by Scottish Water should be returned to customers. This would most easily be achieved by Scottish Water foregoing an appropriate amount of the revenue available to it under the agreed charge caps. This would be consistent with maintaining a tight budgetary constraint.

Improve financial ratios by borrowing less

In the Strategic Review of Charges 2002-06, we sought to begin the process of making Scottish Water financially sustainable. Our approach was to target financial ratios that were consistent with a well-managed regulated company. This approach has had some success. In 2001, the combined enterprise value of the three water authorities was less than the outstanding debt. In 2005, the enterprise value of Scottish Water is substantially greater than the outstanding debt and Scottish Water has made significant progress towards achieving financial sustainability.

Advantages of this approach

This would be the cheapest way to create and maintain a buffer. The improvement in the debt to regulatory capital value ratio would be quite transparent. The financial strength of Glas Cymru would be an immediate comparator.

Disadvantages of this approach

Some stakeholders have questioned why debt, if it is available, should not be used to reduce current charges. As we have explained previously, such an approach increases future charges unnecessarily. An increase in lending in response to an operational shock in the future would directly increase charges. Responding to a pressure to lower charges and increase borrowing would inevitably be more difficult if significant progress had been made in building up a buffer of an appropriate size.

A second disadvantage of this approach is that it would require the Scottish Executive to be able to make (potentially substantial) borrowing capacity available at relatively short notice in the event of an operational shock

Buy a safe, liquid asset

It would be possible to buy an index-linked gilt with the revenue flexibility generated by out-performance. These investments would only be sold to cover the cost of any operational shock. Although the buffer would clearly belong to Scottish Water (and its customers), it would be important for the decisions to release some or all of this reserve to be taken by Ministers. It may also be appropriate for Ministers to consult the new Water Industry Commission prior to taking a decision to release funds from the buffer.

There is a precedent for this as the Post Office invests a proportion of its operating surplus in Government gilts.

It is clear that the creation of this financial buffer over a large number of years has significantly reduced the impact of operational risks on the customers of the Post Office. It would seem sensible to adopt a similar approach in our funding of the public sector water industry in Scotland.

Advantages of this approach

This approach has the advantage that Scottish Water retains these funds. Increasing the size of this financial buffer is likely to have a significant incentive effect on Scottish Water. It could also represent a highly transparent way to measure management performance.

If there is an operational shock, this option is the only one where a response is likely to be relatively painless. Each of the other options would entail either the Scottish Executive finding funding at short notice or taking difficult decisions about delays in investment.

Disadvantages of this approach

This is a very slightly higher cost option for customers since the yield on an index-linked gilt is very slightly lower than the cost of public sector borrowing for an equivalent term.

Pay dividends to a contingency fund held by the Scottish Executive

A third option would be for revenue flexibility generated by out-performance to be paid in dividends to the Scottish Executive. This option would require the Scottish Executive to hypothecate any dividends such that they could be used to cover the cost of any future operational shock.

Advantages of this approach

The payment of dividends would mean that the Scottish Executive is remunerated for the risk that it runs as owner of Scottish Water.

Disadvantages of this approach

This option is less transparent than the first two. It may also be more expensive for customers and it places the onus on the Scottish Executive to manage the contingency fund.

Accelerate the investment programme

A fourth potential option would be to accelerate the delivery of the agreed investment outputs in the baseline programme.

Advantages of this approach

There are clear benefits from improving the levels of service to customers or environmental and public health compliance more quickly.

Disadvantages of this approach

This may reduce the transparency of the capital programme baseline. It is therefore not clear that it is in the customer interest to allow phasing of the capital programme to be the buffer against operational shocks.

Moreover, this option may be difficult to implement. It is possible to conceive how out-performance in delivering investment outputs may reasonably increase or accelerate the capital programme. However, it is difficult to see how out-performance in operating costs could be added to the capital programme. We will have already required Scottish Water to undertake the largest capital programme that can be efficiently delivered. There may therefore be no scope to accelerate investment without incurring a cost in efficiency terms.

Proposed way forward

In the medium term, we believe that the creation of a financial buffer is important. The most effective way to create such a buffer would be through the purchase of a liquid security, such as index-linked gilts. In this regard, this option has clear advantages over the other three possibilities.

We recognise that it may take some time to agree the details of this proposal. In the meantime, we believe that any out-performance by Scottish Water could return any out-performance to customers. This would be consistent with the need to maintain a tight budgetary constraint.

Conclusion

Ensuring that customers receive the best possible value for money in future regulatory control periods requires us to set Scottish Water a tight budgetary constraint in the period 2006-10. We should seek to make progress in agreeing the terms of a buffer against operational shocks.

Section 2: The introduction of regulatory accounts

Chapter 7: Background to the introduction of regulatory accounts

Introduction

Regulators rely on being able to make like-for-like comparisons between companies (or over time) to form a view about the performance of a regulated company and ensure that customers receive value for money.

In order to be sure that the comparative analysis they carry out is reliable, regulators need accurate information. Most regulators rely on regulatory accounts to provide this information. These accounts provide detailed information that has been clearly and consistently defined.

During the past four years there have been a number of changes in our remit⁴⁴. These have had an impact on the kind of information we now need in order to be able to regulate in an effective way. This has led us to introduce regulatory accounts. This chapter discusses the background to, and the design and implementation of, regulatory accounts.

Background to regulatory accounts

Regulatory accounts are a series of financial reporting submissions that are designed to provide regulators with specific information about the performance and financial health of the companies and industries they regulate. They are usually accompanied by a series of guidelines or rules which underline the principles and accounting conventions by which regulators require the accounts to be completed.

Ostensibly, regulatory accounts are similar to the statutory financial accounts that most companies complete as a requirement of the Companies Act 1985⁴⁵. Like regulatory accounts, statutory accounts are completed according to a series of accounting guidelines. These accounting standards are universally used by companies in the UK (FRS, UKGAAP)⁴⁶. Accounting standards are increasingly becoming international (IFRS)⁴⁷.

The principles and rules of statutory accounts apply to all industries. Regulatory accounts, however, are tailored to provide the specific information required for effective regulation of that industry. They are designed to take account of the economics of the particular regulated sector.

The development of regulatory accounts in the UK

Over the last decade, regulatory accounts have played an increasingly vital role in fulfilling the information requirements of many economic regulators in the UK.

Ofwat implemented regulatory accounts in 1992-93 in order to inform its first full price review of the water industry in England and Wales. Over time, the value of regulatory accounts has been recognised by other economic regulators. In the UK, they have been introduced in the following regulated industries:

- civil aviation;
- electricity;
- gas;
- postal services;
- rail: and
- · telecommunications.

In 1998, the Government published a Green Paper which recommended that regulators should require monopoly utility businesses to publish regulatory accounts and to do so in more standard formats⁴⁸. The Government suggested that this would facilitate wider understanding of regulatory issues.

Following the Green Paper, the offices responsible for economic regulation in the UK established a regulatory

⁴⁴ These are discussed in Volume 2.

⁴⁵ All limited companies have a duty to keep accounting records and to prepare annual accounts. The Companies Act specifies the form these annual accounts must take.

⁴⁶ Financial Reporting Standards (FRS), United Kingdom Generally Accepted Accounting Practice (UKGAAP).

⁴⁷ International Financial Reporting Standards (IFRS).

⁴⁸ A fair deal for consumers – Modernising the framework for utility regulation, Department of Trade and Industry, proposal 7.7.

accounts working group. The group comprised representatives from the gas, electricity, water, telecommunications, rail, aviation and postal services industries. The group's aim was to develop areas of consistency within published regulatory accounts. The group's conclusions were published in April 2001⁴⁹.

The following extracts set out the purpose of regulatory accounts:

"In essence, the main purpose of regulatory accounts should be to provide financial information about regulated businesses for use by the regulator, industry, investors, consumers and other stakeholders. This would enhance the information available within the industry and aid in the assessment of the stewardship of management and informing economic and financial decisions." ⁵⁰

In addition, it was stated that regulatory accounts could be useful in:

- "monitoring performance against the assumptions underlying current price controls;
- informing future price control reviews and other regulatory decisions that require financial information such as determining prices;
- assisting in the detection of certain anti-competitive behaviour in the relevant markets, such as unfair cross-subsidisation and undue discrimination at the appropriate level within the business concerned;
- assisting in comparative competition;
- assisting in monitoring financial health; and
- improving transparency in the regulatory process as regulatory accounts are the main source of regular, published and audited financial information about regulated companies."51

We have introduced regulatory accounts to facilitate performance monitoring. The use of regulatory accounts should reduce the need to make adjustments to reported information in order to ensure that our comparisons are robust.

Development of regulatory accounts for the Scottish water industry

In 2004 we undertook a comprehensive project to develop regulatory accounts for the Scottish water industry.

We commissioned Ernst & Young LLP to set out clear definitions and formats for the regulatory accounts. These had to reflect our need to separate core and wholesale activities from non-core and retail activities⁵². Ernst & Young were supported by Black and Veatch Consulting Limited who are experts in the water industry. They ensured that the proposed accounting separation was practical.

The regulatory accounts will rely on the quality of Scottish Water's financial systems. We consulted with Scottish Water throughout the process and are grateful for its co-operation.

Project objectives

The project had a number of key objectives:

- To identify and define the core and non-core activities carried out by Scottish Water.
- To identify and define retail and wholesale activities.
- To design a series of information tables that captured the information required to analyse and regulate retail and wholesale activities in the core water industry.

⁴⁹ The Water Industry Commissioner for Scotland was not represented on this working group.

The role of regulatory accounts in regulated industries. A final proposals paper by the Chief Executive of Ofgem; Director General of telecommunications; Director General of water services; Director General of electricity and gas supply (Northern Ireland); Rail Regulator; Civil Aviation Authority; and Postal Services Commission. (April, 2001) p.3.

⁵¹ Ibid p.3.

Requirements of the Water Industry (Scotland) Act 2002 and Water Services etc. (Scotland) Act 2005.

 To develop a set of regulatory accounting guidelines, which clearly explain the information required in each information table.

In order to achieve these objectives, we sought to build on the experience of regulatory practice south of the border and from other industries.

Experience in other industries

We have sought to maintain consistency between our regulatory accounts and those which Ofwat use.

In England and Wales, water and waste water companies complete regulatory accounts for their 'appointed' business only. Appointed activities are those that the companies are licensed to carry out as water and waste water service providers. As such, they are broadly analogous to Scottish Water's core activities. We have used Ofwat's regulatory accounts and the guidelines that underpin these accounts to distinguish between core and non-core costs.

Ofwat does not distinguish between retail and wholesale costs, whereas the gas and electricity industries have separated retail and wholesale activities. Both the gas and electricity industries have an extensive network that is a natural monopoly. The network elements of the business have been separated from those where competition is possible. In the electricity industry, there is competition in generation and supply (retail). In the gas industry, there is competition in gas exploration and production, gas shipping, and supply (retail). We have drawn on the experience of these industries in capturing costs.

The experience of other industries shows that the definition of wholesale and retail activities used in the regulatory accounts will develop over time. For example, in the electricity industry some £264 million (6% of electricity distribution costs) were reallocated to retail after initial separation. We have not sought to pre-empt the form that the competitive market for the Scottish water industry might take. The definition of retail costs must be sufficiently flexible to respond to changes in the retail market.

Project implementation

We implemented this project in two phases. The first was substantially completed within this Office. Ernst & Young and Black and Veatch led the second phase of the work.

Preparatory work to develop regulatory accounts by this Office consisted of the following steps:

- An initial review of the Ofwat regulatory accounting guidelines (RAGs) in order to determine how applicable they are to the Scottish water industry, and to highlight possible areas of comparability.
- Preliminary discussions with Scottish Water to identify core and non-core functions based on the legal definition provided by the Water Industry (Scotland) Act 2002⁵³.
- Development of two draft regulatory accounting tables to capture operating costs for core and noncore functions, further subdivided into retail and wholesale activities.
- Issue of draft tables for operating costs to Scottish Water for comment and completion with information for 2003-04.

This preparatory work defined the scope of the project.

The second phase of the work was completed in the last quarter of 2004. Ernst & Young held workshops to develop a detailed understanding of core and non-core activities and retail and wholesale activities.

They also designed a series of information tables that would capture the necessary information. They wrote the regulatory accounting rules (RARs), which set out guidance for Scottish Water. Where appropriate, these rules are similar to Ofwat's RAGs, but have been tailored to take account of the current situation in Scotland. For example, Ernst & Young included implementation guidance to assist Scottish Water.

Our initial interpretation of core/non-core was outlined in the second volume of our methodology series, Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10, p.122.

Conclusion

The introduction of regulatory accounts has ensured that we have had the information we needed to complete this draft determination. This brings the regulation of the water industry in Scotland in line with most UK monopoly infrastructure businesses. In the following chapters, we discuss the outputs of the project in more detail and how they have been used in this Review.

Section 2: The introduction of regulatory accounts

Chapter 8: Core/non-core activities

Introduction

Scottish Water's primary role is to provide water and waste water services to customers in the exercise of its 'core functions' as defined in section 70(2) of the Water Industry (Scotland) Act 2002. These services are sometimes referred to as its core activities or as the core business. However, Scottish Water also seeks to provide customers with 'value added' services. Some of these are closely related to its core functions, others are quite separate.

In this chapter we discuss:

- · the development of non-core activities;
- the potential impact of these non-core activities on customers of Scottish Water's core business;
- how legislative changes require us to distinguish between core and non-core functions;
- the role of regulatory accounts in distinguishing core and non-core activities; and
- the implications for non-core activities.

The Strategic Review of Charges 2002-06

The growth of non-core activities

The three regional water authorities were established in 1996. They developed a range of additional services that they could offer to existing commercial customers. Many of these activities were related to the traditional service provision of water and waste water services, such as waste minimisation and consultancy. Others made good use of the authorities' existing assets, such as tankering waste or offering laboratory services. However, the authorities also offered a number of services that appeared to have a less compelling business logic.

The authorities hoped to generate extra income and reduce unit costs in the core water and waste water service. They also believed that these additional services might help retain large customers.

Our advice to Ministers in the Strategic Review of Charges 2002-06 covered both core and non-core activities of the then three authorities. Our remit at the time was to promote the interests of customers of the three authorities. Although we were not required to distinguish between core and non-core activities, we expressed our concern about the lack of focus on the core business.

Potential impact of non-core activities

We also expressed concern at that time that customers' bills could be higher as a result of the focus on non-core activities. In particular, we noted the potential increase in risk within the business caused by diversification into markets where competition existed, and questioned investment in non-core activities.

The financing of any new ventures in the Scottish water industry – whether it is a small opportunity for a start-up with potential for organic growth, or an acquisition – must ultimately be obtained from customers of the core business or from taxpayers. This means that customers bear all of the financial risk. Furthermore, should these new ventures initially make a loss, revenue from core customers' bills would have to be used to cover them. This would divert funds away from the core business. Only if a new venture made a profit could core customers benefit from the expansion of a non-core business. It was also possible that there could be longer run costs (such as costs to exit an activity) that would impact on future costs.

Even if non-core activities were profitable straight away, there is a danger that these profits are achieved at the expense of not realising the potential for efficiency. We highlighted in the Strategic Review of Charges 2002-06 that the most important objective was to reduce inefficiency. The risks of pursuing new ventures have to be viewed both in terms of the capital invested and the management time dedicated to pursuing them. If management time is diverted away from improving efficiency in order to focus on new ventures, this would disadvantage customers.

We did not argue that the authorities should be precluded from pursuing non-core ventures, but we did suggest that they should approach any such venture with caution.

Situation in the water industry in England and Wales

As part of the Strategic Review of Charges 2002-06, we also examined the situation south of the border, where customers' money is not used to fund non-core business. In England and Wales, companies are licensed to provide water and waste water services to customers. These are the services they are 'appointed' to perform. While they are able to undertake non-appointed activities (which we would term non-core) Ofwat's responsibility extends only to customers of the appointed business. Ofwat does not in any way regulate the activities of the privatised companies outside of the appointed business (except in the most extreme case where an activity could threaten the company's ability to fulfil an appointed business licence condition).

Ofwat regulates the revenues of the appointed business and determines the allowable return on capital for the assets employed in the appointed business. There can be no question that a failed venture outside the appointed business could impact on customers' charges in the appointed business. Non-appointed activities are funded through private loans or equity. In this way, shareholders, not customers, bear the financial risks.

Equally, it is not likely that a successful venture by the privatised company of the appointed business would impact on customers' bills. This would only happen if the Board of the company were to decide to reduce the return allowed by the regulator, because of the profit generated elsewhere.

Protection of core customers in England and Wales

Ofwat has established a regulatory framework which ensures that there is a clear separation of appointed and non-appointed activities.

 The appointed water and sewerage business is ring fenced

The ring fence protects the assets and resources of the regulated business from other activities of the Group. This is achieved by means of licence conditions and accounting rules. Licence Condition F requires Directors of the appointed business to provide an annual statement that the ring fenced business has adequate financial and managerial resources to carry out the regulated activities. Moreover, if the appointed business (or an associate business) is proposing to embark on any activity that might be material to its ability to carry out regulated activities, it must notify Ofwat.

Accounting separation

The company's auditors and Reporters scrutinise the accounts of the ring fenced business. They ensure that the accounts are consistent with the regulatory accounting guidelines.

These audited regulatory accounts are quite separate from the holding company accounts.

Transfer pricing rules

A transfer price is the price charged for goods and services (including staff and consultancy) between two related companies. Ofwat examines the price paid for goods and services to ensure that price limits are set on the basis of the actual costs of providing water and sewerage services to customers and not costs inflated by high prices charged for services by a related company. This could be an attempt to divert funds from the non-appointed business, which could benefit shareholders at the expense of customers.

The rules for transfer pricing are set out in Ofwat's regulatory accounting guidelines (RAG 5.03). The guiding principles are that:

 the appointed business pays a fair price for services and products received;

- prices should be set at market prices or less where no market exists, transfer prices should be based on cost:
- market testing should be used to establish market prices for supplies, works and services provided to the Appointee; and
- costs are allocated in relation to the way in which resources are consumed.

Ofwat requires the licensed companies to demonstrate, through the application of these principles, that the appointed business is not over-paying for services provided by related companies.

Ofwat monitors carefully the companies' compliance with the guidelines. It has the power to examine transactions between the appointed business and other group companies.

How effective is the ring fencing?

Ofwat closely monitors the application of ring fencing by the companies south of the border. The licence conditions and Ofwat's monitoring regime protect customers from any trading problems in the companies' unregulated activities.

This monitoring regime is important in England and Wales because of:

- the creation of multi-utilities, such as United Utilities;
- ownership of water and sewerage companies by other concerns, such as Thames Water by RWE; and
- diversification as undertaken by South Staffordshire
 Water and Severn Trent Water for example.

The ring fence has protected the interests of customers and provided stability for the appointed business in the event of takeovers, mergers and diversification. Its effectiveness was demonstrated very clearly when the collapse of Enron, which owned Wessex Water, had no impact on core business customers.

Legislative changes in Scotland

The Water Industry (Scotland) Act 2002 merged the three water authorities to create Scottish Water. The Act defined Scottish Water's core functions and gave it wide-ranging commercial powers.

Scottish Water's core functions

The 2002 Act defines Scottish Water's core functions⁵⁴ by reference principally to the:

- Sewerage (Scotland) Act 1968; and
- Water (Scotland) Act 1980.

In practice this means that Scottish Water's core functions comprise a wide range of defined statutory functions.

Scottish Water's commercial powers

Section 25 of the 2002 Act also allows Scottish Water to pursue commercial activities, subject to Ministerial Guidance. It provides that Scottish Water can:

- form or promote (whether alone or with others) companies (within the meaning of the Companies Act 1985);
- subscribe for share or loan capital of any person;
- guarantee the discharge of any obligation (whether financial or not) of any person;
- form partnerships, enter into arrangements or agreements and co-operate in any way with any person; and
- enter into a contract with any person for the provision or making available of assets or services, or both (whether or not together with goods) whether by Scottish Water or by that person.

⁵⁴ Scottish Water's core functions are defined in section 70(2) of the 2002 Act as its functions under or by virtue of the Sewerage (Scotland) Act 1968 and the Water (Scotland) Act 1980.

Section 25(1) of the 2002 Act requires non-core activities to be "not inconsistent with the economic, efficient and effective" exercise of its core functions.

The Act does not define non-core activities. If an activity is required by statute it is core, if not, it is non-core.

Change to the remit of the Water Industry Commissioner

The 2002 Act also altered the Commissioner's remit so that it was consistent with the powers and duties conferred on Scottish Water. At the time of the Strategic Review of Charges 2002-06, our remit, as defined in statute, was to promote the interests of customers of the three former water authorities.

The 2002 Act limited the remit of the Commissioner to the promotion of the interests of customers of Scottish Water's core business.

The Water Industry (Scotland) Act 2002 sets out the Commissioner's role:

"The Commissioner has the general function of promoting the interests of customers of Scottish Water in relation to the provision of services by it in the exercise of its core functions."55

Also, the Commissioner's advice on charges is to have regard to:

"The economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions." 56

This was an important change to the Commissioner's remit, bringing it more into line with that of Ofwat in England and Wales. As we have noted above, Ofwat's responsibilities extend to customers of the appointed business only.

Separation of core and non-core activities in Scotland

Practical implications of the Water Industry (Scotland) Act 2002

The change in our remit to promote the interests of customers of Scottish Water's core business has had a major impact on this Strategic Review.

In this draft determination we have set charge limits for Scottish Water's core services – water and waste water services to household customers and all wholesale services to licensed retailers. As discussed in the next chapter, the new Commission will regulate retail charges until that market is fully competitive.

In setting charges, we have considered only the costs incurred by Scottish Water in providing core services. We have not taken account of the funding needs of Scottish Water's non-core activities.

We have used many of Ofwat's tools to ensure that we distinguish between core and non-core costs. These include the introduction of regulatory accounts and clear rules on transfer pricing. This has enabled us to describe core functions at a more detailed level than is provided for in the legislation. It has also improved the transparency of the charge setting process. We are able to ensure that Scottish Water's core costs are allocated in an accurate way.

The definition of core and non-core activities

The core functions that Scottish Water performs are defined in statute at a high level. This has been our first point of reference. However, in order to fulfil its core functions, Scottish Water undertakes many activities which are not defined in statute. The picture is further complicated because Scottish Water also employs some of its assets to provide non-core services. For instance, Scottish Water is required to test the quality of water supplied to customers, but it may choose to own laboratories and to provide scientific services to commercial customers. The transfer pricing rules are

⁵⁵ Water Industry (Scotland) Act 2002 section 1.

⁵⁶ Water Industry (Scotland) Act 2002 section 33.

important as they will ensure that Scottish Water's core business pays a fair price for laboratory services.

The definition of core activities must be based on statute, but must also be sufficiently detailed to allow appropriate accounting separation. Ernst & Young has helped us to arrive at a working definition of core activities for accounting purposes. This work followed a three-stage process:

- An examination of the statutory definition of core functions – conducted with reference to those enactments, principally the Water (Scotland) Act 1980 and Sewerage (Scotland) Act 1968, imposing duties on Scottish Water.
- Reconciling the activities undertaken by Scottish Water with the appointed activities undertaken by the companies in England and Wales Appendix 3 of Ofwat's RAG 4.02 ('Guidelines for the analysis of operating costs and assets') provides a set of comprehensive descriptions of the activities it expects a water and waste water undertaker to perform to fulfil its licence conditions. Activities that were not directly identified in statute as core were matched, where possible, with Ofwat's definition.
- Consultation with Scottish Water where activities
 were not identified in statute, or could not be
 conclusively reconciled with Ofwat's definition, we
 consulted Scottish Water on its view of whether an
 activity was core or non-core.

We used this process to establish a comprehensive understanding of core activities. Where an activity undertaken by Scottish Water could not be identified as core, it was assumed to be non-core.

We have defined the following activities as core for regulatory accounting purposes⁵⁷:

- Abstraction, treatment, storage, conveyance and distribution of potable water.
- Conveyance, treatment and disposal of waste water, including public septic tanks.

- · Water and environmental quality management.
- Emergency planning and response.
- Physical disconnection.
- Household customer accounting and billing.
- Household customer credit management.
- Household customer contact management.
- Household customer billing complaints, enquiries resolution and Guaranteed Minimum Standards (GMS).
- Operational complaints resolution and GMS for all customers.
- Provision of water, sewerage and trade effluent services to non-household customers under ss. 17 and 20 of the 2005 Act. 58

Implications for Scottish Water's non-core activities

Although Scottish Water's non-core activities are now not within our remit, we have to ensure that they do not affect the core business. In order to minimise this risk, Scottish Water and the Scottish Executive will need to consider:

- sources of funding for the non-core business; and
- the extent of legal separation between core and noncore activities.

Funding

The costs or investment needs of non-core activities have not been included in the charge limits for customers determined by this Review. Scottish Water may not use any of the resources made available in this draft determination to fund non-core activities.

Consequently, Scottish Water will have only two sources of capital for new and existing non-core activities;

⁵⁷ This list also takes account of the retail/wholesale split described in Chapter 10.

These provisions require Scottish Water to continue to supply water, provide sewerage (or, as the case may be, dispose of sewage) and provide trade effluent services to the occupier of premises where arrangements between that occupier and a licensed provider have come to an end in specific circumstances.

retained income from non-core activities and, perhaps, borrowing from the Scottish Executive.

Any such lending should be at commercial rates since the majority of the non-core services Scottish Water provides are open to competition. If non-core activities are funded with public debt at preferential rates, Scottish Water would be vulnerable to challenge. There would be a particularly high risk of challenge if a significant capital outlay were required.

The future funding of Scottish Water's non-core activities is a matter for the Board of Scottish Water and the Scottish Executive as its de facto owner. Our remit does not extend beyond the need to ensure that these non-core activities do not impinge on core activities. In this regard, the introduction of regulatory accounts has been critical.

Formal separation

At present, Scottish Water has both core and non-core activities. These are only separated by the audited regulatory accounts. There is no formal legal separation.

Scottish Water may choose to form a separate legal entity to be responsible for any non-core activities. A number of the privatised water companies in England and Wales, and other public sector organisations such as Royal Mail, have separated non-core activities. There are a number of possible advantages to be gained from this greater degree of separation:

- It would reduce the risk of distraction if Scottish Water's non-core business(es) had its own board of directors and management, the directors of the core business would be able to focus on the core business alone.
- It would ease the policing of transfer pricing as
 two separate legal entities, Scottish Water and the
 non-core business would need to formalise any
 working arrangements or shared services in legal
 contracts. This would simplify the monitoring of
 transfer pricing.

 It would provide greater transparency – legal separation of core and non-core activities would reduce the likelihood that customers of the core business are disadvantaged by expansion into noncore activities.

Equally, it could help the non-core business to demonstrate that it does not enjoy an unfair advantage because of its relationship with Scottish Water.

Conclusion

In the last Strategic Review of Charges we noted that non-core business is more risky, and that the focus of Scottish Water should be on its core activities. This remains our view.

The change in our remit in 2002 was an important step towards ensuring that Scottish Water's core customers are not disadvantaged as a result of Scottish Water's non-core activities. We have used regulatory accounts and transfer pricing rules to distinguish between core and non-core costs and to monitor the allocation of costs. This ensures that charges to core customers only reflect the costs of providing core services.

Section 2: The introduction of regulatory accounts

Chapter 9: The retail and wholesale separation

Introduction

In this chapter we outline the likely impact of the Water Services etc. (Scotland) Act 2005 and, in particular, the framework for competition that is introduced by the Act. We also examine this framework in the light of the benefits that have accrued to customers from the introduction of retail competition in the gas and electricity industries.

Introduction of retail competition in the Scottish water industry

Competition law

Until recently there was little competition in the supply of water and sewerage services. There were a few small brokerage (retail)⁵⁹ deals and some larger users had made alternative arrangements outside the public network. The Competition Act 1998 came into force in March 2000. It prohibits agreements, business practices and conduct that damage competition in the UK. The Act prohibits:

- anti-competitive agreements (known as the Chapter I prohibition); and
- abuse of a dominant market position (known as the Chapter II prohibition).

The Scottish Executive has also recognised that, subject to safeguards which ensure that broader policy objectives can be delivered, it may be beneficial to introduce some competition into the water and sewerage industry in Scotland.

The Water Services etc. (Scotland) Act 2005

The Water Services etc. (Scotland) Act 2005 received Royal Assent in March 2005. It contains provisions that establish a framework for retail competition in the Scotlish water industry. This separates Scotlish Water's retail activities from its network and treatment activities. More specifically, the Act includes the following provisions:

- It prohibits common carriage. Scottish Water will remain responsible for operating the public network, abstracting and treating water, and treating and disposing of waste water.
- Retail competition is restricted to non-household customers. Scottish Water will continue to provide all aspects of the water and waste water service to household customers.
- Scottish Water is required to establish a retail subsidiary.
- Retailers, including Scottish Water's subsidiary company, will be licensed. They will be held accountable for their performance through their licences.
- It establishes a Water Industry Commission to replace the Water Industry Commissioner. The Commission will administer licences to retailers and monitor compliance.
- The Commission is required to set charges for Scottish Water's wholesale services.

The introduction of competition in other utilities

In the fixed-line telecommunications, gas and electricity industries, there is a clear natural monopoly. This is because the distribution networks are expensive to build and maintain so it would be difficult and expensive for a competitor to replicate them. There are other activities, such as the retail element of the supply chain, where the economic rationale for a monopoly is less persuasive.

During the 1980s and 1990s, both the gas and electricity industries underwent significant changes. They are no longer statutory, vertically integrated monopolies. Government and regulators have separated off the elements of the supply chain that were not a natural monopoly and have allowed competition in those areas.

⁵⁹ Brokerage: a deal by which water is sold to customers by a third party, who is not responsible for anything other than the final supply of water to a customer's premises. Off-network: a privately owned water supply or waste water treatment and disposal system that reduces or eliminates the need for a connection to the public water and waste water system.

⁶⁰ A vertically integrated company carries out the functions of production, distribution and supply.

Development of competition in the gas industry

Until 1982, the British gas industry operated in a similar way to the way in which the Scottish water industry operates today. British Gas was a publicly owned monopoly which abstracted, conveyed and sold gas to household and non-household customers across the UK. In 1982, the Oil and Gas Enterprise Act introduced an element of competition into the industry by permitting large users (those with an annual usage of 25,000 therms or over)⁶¹ to buy their gas from other suppliers. Under the framework, however, any new suppliers into the market had to rely on British Gas to transport gas. No new suppliers entered the market.

In 1986, the Gas Act (1986) privatised British Gas and established Ofgas as the economic regulator. The Act required three separate activities in the gas supply chain to be licensed: shipping, transportation and supply. However, British Gas retained its vertically integrated structure. It acted as producer, transporter and supplier of gas. Moreover, British Gas was the only transporter.

In 1987, Ofgas referred British Gas to the Monopolies and Mergers Commission (MMC) for abuse of its monopoly position. Ofgas believed that, as the seller of gas and owner of the transportation system, British Gas had too much scope to prevent competition from developing in the supply market. The MMC made a series of recommendations to encourage the growth of competition. In 1989, a more accessible framework for common carriage was introduced. In 1991, a report by the Office of Fair Trading (OFT) suggested that these changes had been largely ineffective.

The Competition and Services (Utilities) Act 1992 included provisions to facilitate greater competition in the supply of gas. It provided for the reduction of British Gas' existing monopoly threshold from 25,000 therms to 2,500 therms, essentially opening up to competition all but the smallest non-household customer⁶². Under the provisions of the Act, British Gas retained two separate monopolies, one for the transportation and storage of gas, the other for the supply of household customers.

British Gas' competitors were, however, almost completely dependant on British Gas to provide storage and transportation services. In 1992, the MMC recommended a full legal and physical separation of British Gas' distribution and trading functions by 1997, with accounting separation to be introduced by 1994. The Secretary of State allowed all activities to remain part of British Gas, conditional on a full accounting separation and open access to the entire gas market by 1998. Transco was established in 1996 as a separate business unit of British Gas to operate the distribution business.

The introduction of the Gas Act (1995) provided for full liberalisation of the supply market, for both household and non-household customers. It removed the 2,500 therms threshold set in the 1992 Act.

Development of competition in the UK electricity industry

The electricity industry in England and Wales has followed a similar path.

The electricity supply chain comprises four main components: generation, transmission, distribution and supply. In England and Wales the supply chain was divided into two main components; generation and transmission, and distribution and supply (retail). Until 1989, generation and transmission was the responsibility of the Central Electricity Generating Board (CEGB). Distribution and supply was the responsibility of 12 regional electricity boards, each of which was a local monopoly. In Scotland, the North of Scotland Hydro-Electric Board (NSHEB) and the South of Scotland Electricity Board (SSEB) were vertically integrated and were responsible for generation, transmission, distribution and supply in their respective areas.

The Electricity Act 1989 restructured the industry. It divided the CEGB generation between three companies: National Power, PowerGen and Nuclear Electric. The CEGB's transmission responsibilities were transferred to a new company, National Grid. The 12 regional boards became independent companies

⁶¹ 1 therm is approximately 2.9 kWh.

⁶² In 1992, 2,500 therms was about equivalent to an annual bill of at least £1,200. See Stoppard, M., Competition and Regulation in the Gas Industry: An Evaluation of the MMC Report on Gas in the UK (Oxford Institute for Energy Studies, 1993), p.6.

(Public Electricity Suppliers, or PESs), which were licensed to distribute and supply electricity within a geographic area. They remained monopolies in supplying customers with a demand of less than 1 Megawatt (MW). The public electricity suppliers jointly owned the National Grid Company.

In Scotland, the industry remained largely vertically integrated, with the responsibilities of the NSHEB and the SSEB passing to Scottish Hydro-Electric, Scottish Power and a nuclear generating company, Scottish Nuclear. As in England and Wales, customers with a demand higher than 1MW were able to choose from a range of licensed suppliers; for those customers with demand below 1MW the regional licensed supplier retained its monopoly.

In 1994 the threshold for competition was reduced to 100KW and in 1998 competition was extended to all customers.

The Utilities Act (2000) completed the separation of the supply and distribution functions of the PESs. It required the full legal separation of the PESs' supply and distribution functions. The integration of distribution and supply functions limited the opportunity for new suppliers to enter the market.

The 2000 Act also introduced the New Electricity Trading Arrangements (NETA). NETA replaced the existing electricity pool, and was designed to place a further downward pressure on electricity wholesale prices. A study by Ofgem on the effects of NETA appears to confirm its success. NETA has now been replaced by the British Electricity Trading and Transmission Arrangements (BETTA) which has put in place new arrangements as from 1 April 2005 which apply across Great Britain, in essence, extending the methodology that applied to England and Wales to Scotland also.

Telecommunications

British Telecom (BT) was privatised in 1984 as a fully vertically integrated company. At that time, Mercury

(a subsidiary of Cable and Wireless) was also licensed as a supplier of telecommunications services. Britain pursued this policy of duopoly from 1984 until 1991. Despite there being some degree of competition in the market, Oftel⁶³ continued to set retail prices.

Although competition has gradually increased, the structure of the telecommunications industry appears to have reduced the scope for effective competition. For example, some operators require customers to have a BT connection. These customers therefore receive two bills, one for the fixed charge line rental and the other for their call charge. This situation arises because BT had been two separate businesses, with the wholesale business selling to its retail business (as well as other retailers).

Competitors have made a number of complaints alleging that other BT activities have subsidised BT's retail services. This would possibly have been an abuse of its dominant position. It appears that some of these complaints reflect a perceived lack of transparency in pricing for various services. There have also been a number of allegations that the BT retail business had a first-mover advantage over other retailers.

Most of the complaints against BT have not been upheld⁶⁴. However, the number of complaints highlights the importance of a transparent pricing system and of the arm's length relationship between the wholesaler and its retail business.

Benefits to customers

Both the gas and electricity industries have significantly improved their efficiency.

Industrial gas prices fell by more than 40% in real terms between 1992 and 1996. In 1999, industrial gas prices were some 45% lower than in 1990. Industrial prices for electricity in 1999 were 22% lower in real terms than in 1994. They were 26% lower than in 1990.

⁶³ The Office for Telecommunications (Oftel) was the economic regulator. Its functions have now been transferred to Ofcom, the office for Communications Regulation.

An example of a complaint that was upheld was when BT moved to introduce a caller display promotion involving three months' free service and use of BT's caller display equipment. Complaints were made regarding the time between the announcement of the intention to provide this offer and the offer sart date. Competitors felt that there was insufficient time for them to ensure thay had sufficient stock to compete with BT for the expected demand. It was upheld that BT was in breach of its licence obligations.

Household prices have also fallen. By 2002, the average annual household electricity bill had fallen from £268 to £238 (a reduction of 11%) and the average annual household gas bill from £375 to £308 (18%)⁶⁵. By 2004, 47% of gas customers and 51% of electricity customers had switched supplier at least once. The available evidence suggests that customers from all social groups and across the country are switching suppliers at similar rates⁶⁶.

Levels of service have not been adversely impacted. Ofgem raised the expected standard of service that is required of energy companies, and analysis suggests that suppliers' performance has improved. The number of failures to meet guaranteed standards per 100,000 electricity customers has fallen consistently from more than 50 in 1991-92 to under 10 in 1998-99⁶⁷. In 1996, British Gas responded to 76% of letters within five days; by 1999 this was 100%.

A paper by Professor Stephen Littlechild⁶⁸ electricity regulator at the time of the introduction of competition in electricity. He noted that large customers benefit from better prices, value-added service and terms. The benefits of such competition for smaller customers include bundling with other utilities and more flexible tariffs and payments terms.

He also noted that a dynamic retail market exerts pressure on the wholesaler to be more responsive and efficient. There is a keener wholesale market, offering lower prices and greater responsiveness. Such lower prices and better service result from greater efficiency and innovation in reponse to customer demand.

The District Network Operators (DNOs) have a natural monopoly in the local distribution of electricity. The Cambridge Economics Policy Associates (CEPA) conducted a study for Ofgem in November 2003⁶⁹. The study looked at total factor productivity (TFP) for DNOs.

TFP measures the efficiency of a producer in using all of the inputs in its production processes to produce valued outputs. It includes capital, labour and raw materials. Measures of partial factor productivity (PFP)

can be used to determine the efficiency of a single input such as capital expenditure or operating expenditure.

Table 9.1 shows the volume adjusted trend productivity growth astimates for UK DNOs⁷⁰. They are volume adjusted to allow for any economies of scale.

Table 9.1: Volume adjusted trend productivity annual growth estimate for UK DNOs

	1991-92-1996-97	1996-97-2001-02
TFP	2.6%	5.2%
TFP including quality	2.7%	5.2%
PFP, operating expenditure only	4.9%	9.2%
PFP, capital [expenditure] only	0.6%	1.8%

This study found that the DNOs had made significant improvements in their productivity following privatisation. As Table 9.1 also shows, there was an even greater improvement in productivity after the introduction of full competition to the electricity industry.

The role of regulatory accounts in the Scottish Water industry

Defining retail and wholesale activities

The Water Services etc. (Scotland) Act 2005 has required us to set both the overall level of wholesale charges and a retail charge cap.

We used the regulatory accounts to define retail and wholesale activities in detail.

The definition of retail and wholesale activities at a high level is relatively straightforward:

- Retail is the selling of goods or services directly to consumers; it is usually in small quantities and the goods or services are not for resale.
- Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers.

⁶⁵ Ofgem, Competition in electricity and gas supply – separating fact from fiction (2002).

Ofgem, Domestic Competitive Market Review (2004).

⁶⁷ Quoted in DTI, The Social Effects of Liberalisation: the UK Experience (Lisbon, 2000).

⁶⁸ Stephen C Littlechild, 'Competition in retail electricity supply', Journal des Economistes et des Etudes Humaines, September 2002.

⁶⁹ Cambridge Economic Policy Associates, 'Productivity improvements in distribution network operators', November 2003, available at www.ofgem.gov.uk.

Cambridge Economic Policy Associates, 2003.

Many markets make a distinction between wholesale and retail activities. Retailers specialise in knowing and understanding customers: what they want to buy and how they would like it to be provided. They benefit from economies of scale by buying the product wholesale, and from economies of scope by selling the products and services of different suppliers to their customers.

In defining Scottish Water's retail and wholesale activities, our starting point was to define all customerfacing activities as retail. In this model, a non-household customer should only interact with their retailer. This is similar to the situation in other industries. We would not seek to return a faulty garment to the wholesaler or to the factory where it was made.

We identified the following retail activities:

- retail pricing and tariffs;
- · the billing process;
- collection of charges;
- debt follow up and debt management;
- meter reading and customer meter operations;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues;
- marketing;
- managing the connection/disconnection process;
- scheduling septic tank emptying; and
- supporting wholesale emergency responses.

The overall level of wholesale charges that we have set is consistent with this definition.

Transfer pricing

We will scrutinise the transfer prices for goods and services between Scottish Water and its associate companies. The prices should be based either on actual costs or market prices.

On 1 April 2006 the new Commission will license the retail subsidiary of Scottish Water. Scottish Water will be expected to record details of all transactions between the wholesale and retail companies.

A failure to implement transfer pricing effectively could result in undue cross-subsidy. For instance, if Scottish Water chooses to outsource some of its functions to its retail subsidiary, and pays a price which is higher than the cost of providing the service itself, then household customers would effectively be subsidising the operations of the retail subsidiary. Transfer prices should be based on the market price for the service provided.

It is a stated objective of the Scottish Executive that no customer group should be adversely affected by the introduction of the competition framework. By asking Scottish Water to provide information on transfer prices in its regulatory accounts, we can ensure that no customer group is disadvantaged.

Licensing regime

Licensing will play an important role in the new market. It will govern the relationship between Scottish Water, its retail subsidiary and new entrants.

New entrants wishing to supply non-household customers will be required to apply for a licence. This should ensure that all companies in the market operate on a level playing field.

New entrants to the market may apply for either or both of the following types of licence:

 Water – establishes a right for the holder to supply non-household customers with water services. Waste water – establishes a right for the holder to supply non-household customers with waste water services.

New entrants will be required to demonstrate that they have the necessary financial resources and managerial and technical competency to satisfy the licence conditions.

Significant preparatory work and consultation with stakeholders will be required before Scottish Water's retail subsidiary can be licensed in 2006. In April 2005 we issued our first consultation paper on licences. This discussed the principles that should underpin the licensing regime. In October 2005 we will issue our second consultation paper, which will cover the draft licence conditions for Scottish Water's retail subsidiary.

While the exact nature and content of licences is still subject to consultation, we expect that licences will:

- define the service to be provided;
- govern relationships between:
 - wholesaler and retailer,
 - retailer and non-household customer.
 - regulator and retailer (particularly the provision of information to the regulator);
- govern participation in the market;
- set out expectations for behaviour by market participants; and
- provide a vehicle for enforcement, sanction or ultimately removal of the licence and expulsion from the market.

Licences will play a key role in governing the responsibilities that retailers have to both Scottish Water, as the wholesaler, and their non-domestic customers.

Retailers will be able to enter into separate agreements with Scottish Water. Such agreements may be for the provision of additional services which are not included in the overall level of wholesale charges.

Licences will specify the services that retailers must provide to non-household customers, and the wholesale services they can expect to receive from Scottish Water. In many instances, retailers may choose to outsource activities. However, ultimate responsibility for the provision of that service will lie with the retailer.

Compliance regime

The 2005 Act places a duty on the new Commission to monitor compliance with the terms and conditions of licences and, where necessary, to take action to ensure compliance.

We discussed the introduction of a compliance regime in our April consultation.

As part of the compliance regime, we will have to develop processes to monitor compliance. We will also require Scottish Water to develop appropriate systems to demonstrate compliance. The nature of the compliance regime will in part depend on the extent to which Scottish Water and Scottish Water's retail subsidiary continue to share costs. It is possible that Scottish Water and its retail subsidiary may initially continue to share personnel, facilities and human resources functions. Scottish Water must ensure that these activities are properly documented, and that transfer pricing rules are observed.

Funding

The retail subsidiary of Scottish Water will be operating in a competitive market and, as such, will have to pay a market rate for capital.

This should not preclude the Scottish Executive from being a source of these loans. However, it will be important that the Scottish Executive can demonstrate that the costs of funds reflect the market rate.

Conclusion

The framework for competition for the Scottish water industry introduced by the Water Services etc. (Scotland) Act 2005, has many similar characteristics to that employed in the energy supply industries. It involves the liberalisation of one part of the value chain, while the remainder stays a monopoly. The requirement for Scottish Water to establish a retail subsidiary to operate in the competitive market will do much to ensure that, as the incumbent, Scottish Water is not provided with an unfair advantage in that market. This is consistent with lessons learned from the disaggregation of the energy supply activities.

Regulatory accounts will prove to be a vital means by which to monitor this separation in the future and to demonstrate that there is no preferential treatment. They have allowed us to collect the information necessary to determine an overall level of wholesale charges that reflects the true costs of Scottish Water. We have ensured not only that all participants in the new market pay a fair charge, but also that Scottish Water has the revenue it requires to continue to provide services to all of its customers.

Section 2: The introduction of regulatory accounts

Chapter 10: Proposed regulatory accounts

Introduction

In this chapter we discuss the form of the regulatory accounts for the Scottish water industry. These were prepared on behalf of this Office by Ernst & Young LLP, supported by Black and Veatch Consulting Limited.

The outputs of the project were as follows:

- A complete set of regulatory accounting guidelines designed specifically for Scottish Water, but consistent where appropriate with those developed by Ofwat.
- A set of regulatory returns (both definitions and tables) capable of detailing all of the required information for the core business, separated into wholesale and retail activities. These returns will be fully consistent within themselves, and reconcilable in principle to the statutory accounts.
- A set of detailed guidance to auditors and Reporters, to enable them to audit regulatory account submissions effectively.
- A series of draft versions of the above, enabling Scottish Water to provide feedback which, where possible, will be taken into account in developing final versions.

The regulatory accounts project

Business activity separation

Ernst & Young outlined in a detailed report the process they had gone through to define the core and non-core separation and the wholesale and retail separation. The report also detailed both the issues that arose when undertaking the project and those which Ernst & Young believe may arise if an effective separation of Scottish Water is to be made in 2006. Copies of the report are available on our website at www.watercommissioner.co.uk

Regulatory returns – tables and supporting definitions

Ernst & Young developed a series of tables specifically for the Scottish water industry. They are accompanied by definitions which clearly outline what must be reported in each cell of the table. These M and N tables will now form part of the Annual Return submission completed by Scottish Water each year.

The tables are shown in Table 10.1.

Table 10.1: The M and N Tables

M1/M2	Analysis of operating costs for water and waste water respectively.	
M1A/M2A	Analysis of turnover for water and waste water respectively.	
M1B/M2B	Analysis of fixed assets for water and waste water respectively.	
N1/N2	/N2 Summary of transfer pricing – capital expenditure and profit and loss respectively.	

Regulatory accounting rules (RARs)

The RARs developed by Ernst & Young are broadly the same as Ofwat's regulatory accounting guidelines. They follow the same structure but are tailored to reflect the legal situation in Scotland.

In addition, Ernst & Young also wrote an introduction to the RARs, which summarises the five main RARs, and provides a summary glossary of terms.

We summarise the content and the purpose of the RARs in Table 10.2.

Table 10.2: The regulatory accounting rules

	Title	Purpose
	Introduction to RARs	Provides a brief overview of each RAR and a glossary of terms compiled from all five RARs.
RAR 1	Accounting for current costs and regulatory capital values	Discusses the requirements for current cost accounts, limitations on uses and various simplifications adopted for application in the Scottish water industry.
RAR 2	Classification of expenditure	Classifies expenditure by purpose category.
RAR 3	The contents of regulatory accounts	Covers the requirements for accounting information, and the rules by which regulatory accounts should be completed each financial year.
RAR 4	Analysis of operating costs and assets	Covers the form, content and principles of the analysis of operating costs, revenues and tangible fixed assets.
RAR 5	Transfer pricing	Provides guidance on the procedures and methodologies to be followed when completing transactions between the core and non-core activities and associate entities.

Section 3: Business plans and guidance Chapter 11: Review of the timeline

Introduction

We are committed to the principles of the Better Regulation Task Force of transparency, accountability, proportionality, consistency and targeting. Our approach to the Strategic Review of Charges 2006-10 was based on a clear timeline which set out in detail:

- the dates by which Scottish Water needed to provide information;
- the points at which stakeholders could influence the Review: and
- dates when we would comment on our progress.

This chapter reviews the key dates in the timeline.

We were fortunate that Scottish Ministers commissioned the Strategic Review of Charges in May 2004 and that the Quality and Standards III process had already begun a year earlier. Although there were still likely to be time constraints if Scottish Water was going to have the time to supply two draft business plans, commissioning the Review in May allowed us to adopt a staged approach.

The timeline for the review process was originally outlined in Volume 1 of our methodology consultation, which was published in July 2004.

We have published all information relating to this Review on our website (with the exception of Scottish Water's first draft business plan). This has helped to ensure that customers and stakeholders, including Scottish Water, have been kept up-to-date and fully informed about our progress in completing this Review. We hope that stakeholders have found this useful.

We have collected a wide range of investment performance, customer service and financial information from Scottish Water. For example, Scottish Water has submitted two drafts of its business plan for the 2006-10 period. These drafts supplemented the standard regulatory

returns and set out Scottish Water's strategy and objectives for the coming period. As such, they were a key element of the process for the Strategic Review of Charges 2006-10.

We have recognised from the start that we are considering issues that have important implications for stakeholders. We have therefore held a series of stakeholder information days. At these meetings we provided information about our progress, listened to representations from stakeholders and explained our approach. We have taken full account of the comments of stakeholders in this Strategic Review.

We have held these stakeholder meetings approximately every six weeks since publication of Volume 1 of our methodology consultation.

A critical input to the review process has been the Guidance we received from the Scottish Ministers. In May 2004, Ministers provided high-level Ministerial Guidance that set out the principal factors that we were to consider when preparing the draft determination. In February 2005, we received detailed Ministerial Guidance on the Scottish Executive's objectives for this review. This detailed Guidance set the key customer service standards, investment and principles of charging parameters for Scottish Water. We have assessed the lowest reasonable cost of delivering these objectives.

Following publication of this draft determination, the new Water Industry Commission may receive final Guidance from Ministers. This will inform the final determination in November 2005.

We are content that the timeline we developed for the Review has provided customers and stakeholders with sufficient opportunities to consider the relevant issues and provide input to the process.

Key dates

The detailed work plan for the Strategic Review of Charges 2006-10, published in July 2004, provided

⁷¹ This initial guidance was contained in the commissioning letter of 26 May 2004 from the Minister for Environment & Rural Development, Ross Finnie MSP, to the Commissioner.

This detailed guidance was contained in the letter of 9 February 2005 from the Deputy Minister for Environment & Rural Development, Lewis MacDonald MSP to the Commissioner.

information about more than 180 events⁷³. These ranged from relatively minor information submissions to major events such as the publication of this draft determination. We review below the key dates in the timeline after the publication of the Ministers' objectives.

9 February 2005 – detailed Ministerial Guidance

On 9 February 2005 we received detailed Ministerial Guidance with regard to the objectives and standards that Ministers require Scottish Water to deliver during this regulatory control period. This Guidance superseded the initial Guidance contained in the commissioning letter. It included the conclusions from the Scottish Executive's consultations on the principles of charging and the investment priorities for the water industry in Scotland⁷⁴.

The Scottish Executive set out the following principles of charging:

- charges should be harmonised, ie customers in any given group should continue to pay the same rate for the same services, wherever they are in the country;
- the 25% discount on charges for single adult households should be maintained;
- a new 25% discount for low-income families should be introduced;
- the discount for second homes should be abolished;
 and
- the imbalance between the charges levied on nonhousehold and household customers should be reduced (by £44 million), but in a manner which is best calculated to minimise the impact on household charges.

The Quality and Standards III process⁷⁵ was designed to identify Scottish Water's investment priorities for the period 2006-14. The detailed Ministerial Guidance contained the Executive's conclusions on this

investment programme and their assumptions about the level of borrowing that would be available to Scottish Water between 2006 and 2010. This was vital information which underpins our draft determination of Scottish Water's charges for the period 2006-10.

The Ministerial Guidance identified the following three broad objectives:

- to achieve the maximum affordable improvements in public health and environmental protection standards;
- to support housing and economic growth across Scotland through investment in new infrastructure capacity; and
- to ensure that charges are affordable, stable and sustainable across the period.

The investment objectives were then split into two separate categories: 'essential' objectives and 'desirable' objectives. The essential objectives are:

- to improve the quality of 530 kilometres of rivers and coastal waters:
- to improve the quality of drinking water for 1.5 million people across Scotland;
- to tackle constraints on new development by allowing an estimated 120,000 new homes and more than 4,000 hectares of land for commercial development, to be connected to public networks;
- to take action on odour from 35 waste water treatment works; and
- to remove more than 1,100 homes from the risk of sewage flooding.

We were asked to ensure that Scottish Water's charges were set in such a way as to allow these 'essential' objectives to be achieved irrespective of their impact on customers' charges. In addition, Ministers asked us to

⁷³ The timeline is published in full in our document 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1.

⁷⁴ Scottish Executive consultations 'Investing in Water Services 2006-14' and 'Paying for Water Services 2006-2010' both published in July 2004 by the Scottish Executive.

⁷⁵ See Volume 5, Chapter 5.

determine how many of their 'desirable' objectives could be delivered without compromising the goals of efficient delivery of investment and stable charges⁷⁶.

23 February 2005 – second draft investment plan passed to Reporter

Scottish Water was required to submit its investment proposals for the second draft business plan to the Reporter. This investment programme had to be fully consistent with the detailed investment objectives set out in the Ministerial Guidance.

Our guidance required the capital investment programme to be defined at a project level. For each project, we asked for information about forecast costs and outputs.

20 April 2005 – second draft business plan issued

The second draft business plan was Scottish Water's final opportunity to communicate its strategy, objectives and resource requirements to this Office ahead of the draft determination. The second draft business plan was required to reflect the guidance that we issued in December 2004 and the Ministerial Guidance that was provided in early February 2005.

June 2005 - draft determination published

This draft determination is published as scheduled on 30 June 2005. This contains our draft determination of charge caps for the next regulatory control period. The determination comprises seven volumes:

- Volume 1 The proposed charge caps an executive summary,
- Volume 2 Introduction and background,
- Volume 3 Our approach to setting charge caps,
- Volume 4 Economic regulation of the public sector water industry in Scotland,
- Volume 5 Financing delivery of the investment objectives of the Scottish Ministers,
- Volume 6 Setting an appropriate level of operating costs,
- Volume 7 Setting charge caps.

We have made our draft determination available on our website. We are keen that they take the opportunity to comment on this draft determination. This is a final chance to influence Scottish Water's charges for the next four years.

August 2005 – final guidance from Scottish Ministers

In August, the Scottish Ministers may provide final Guidance on the Strategic Review of Charges 2006-10 in the light of our draft determination. We expect this guidance to build on the detailed Ministerial Guidance provided in February 2005.

23 September 2005 – closing date for representations on draft determination

The response deadline for representations on this draft determination is 23 September 2005.

November 2005 – publication of final determination

This final determination will set charge caps for Scottish Water for the period April 2006 to March 2010. The final determination will be the responsibility of the new Water Industry Commission. The new Commission will take account of the representations of stakeholders.

Under the new regulatory framework, established by the Water Services etc. (Scotland) Act 2005, Scottish Water may require the new Commission to refer the determination of charges to the Competition Commission.

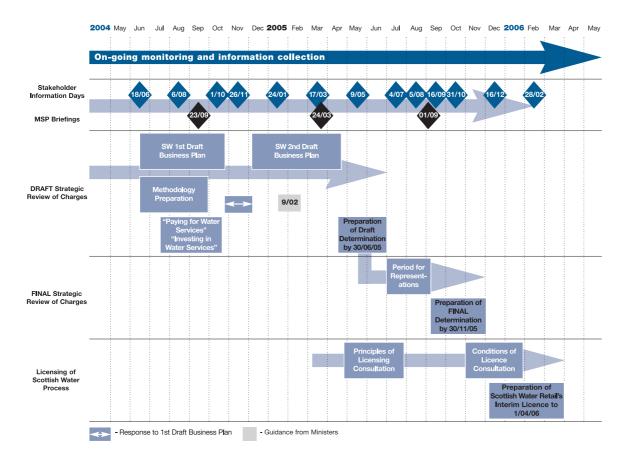
Summary

This chapter provides an overview of the timeline that we followed for the Strategic Review of Charges 2006-10. Our approach has taken account of the Better Regulation Task Force principles of transparency, accountability, proportionality, consistency and targeting. We set the key dates in the timeline well in advance and ensured that stakeholders were properly informed.

These desirable objectives and the priority order in which they should be implemented can be found in the ministerial statement on water industry objectives and charging of 9 February, via this link: http://www.scotland.gov.uk/Topics/Environment/Water/17583/Investment

Figure 11.1 (originally published in Volume 1 of our methodology document, in July 2004), provides a useful overview of our work plan.

Figure 11.1: Timeline for the Strategic Review of Charges 2006-10



Section 3: Business plans and guidance Chapter 12: Review of Scottish Water's first draft business plan

Introduction

This chapter reviews Scottish Water's first draft business plan. We first outline the role that the business plan plays in the review process. We then explain the purpose and scope of the plan. The business plan supplements the information contained in the standard regulatory returns and sets out Scottish Water's strategy and objectives for the coming period.

This chapter provides a brief summary of some of the key messages from Scottish Water's first draft business plan.

The chapter concludes with a summary our initial response to Scottish Water's first draft business plan. The plan informed the early stages of the Strategic Review and allowed more detailed analysis of Scottish Water's funding requirements. We also took account of the business plan in developing our guidance for the second draft business plan.

The overall purpose and scope of the first draft business plan

Customers and other stakeholders are entitled to expect Scottish Water to have clear, well-developed plans for the business. We asked for two draft plans to inform our Strategic Review of Charges 2006-10.

The first draft business plan represented Scottish Water's first opportunity to advise us of its strategy.

The main aims of the business plan can be summarised as follows:

- To communicate Scottish Water's long-term strategic plans.
- To allow us to calculate charge limits for 2006-10.
- To allow us to assess the scope for efficiency.
- To reassure us that there is effective stewardship of the assets.

- To reassure us that Scottish Water can maintain its services to customers.
- To allow us to fund the agreed requirements of the Scottish Environment Protection Agency and the Drinking Water Quality Regulator.

We required Scottish Water to provide information on the level of operating and capital costs that it expected to incur. We expected Scottish Water to provide a detailed analysis of the investment programme and its impact on the level of service to customers.

The business plan process

Volume 1 of our methodology consultation, published in July 2004⁷⁷, set out the key dates for both the first and second draft business plans. These are shown in Table 12.1.

Table 12.1: Key dates for first and second draft business plans

Date	Event	
First draft bu	siness plan	
25/06/2004	WICS issues guidance on first draft business plan	
05/07/2004	Scottish Water's initial issues to WICS	
08/07/2004	Workshop on guidance	
16/07/2004	Scottish Water's final issues to WICS	
21/07/2004	Guidance to Reporter issued by WICS	
28/07/2004	WICS' clarification of Scottish Water issues	
01/09/2004	Draft investment plan to Reporter for audit	
29/10/2004	Scottish Water submits first draft business plan to WICS	
15/11/2004	Workshop on clarification of issues	
23/11/2004	Scottish Water Board presentation on key strategic issues	
03/12/2004	WICS' response to first draft business plan	
Second draft business plan		
8/12/04	Publication of guidance for second draft business plan	
14/12/04	Scottish Water's initial issues to WICS	
17/12/04	Workshop on guidance	
17/12/04	Guidance to Reporter issued by WICS	
23/12/04	Scottish Water's final issues to WICS	
20/04/05	Scottish Water submits second draft business plan to WICS	
5/05/05	Workshop on detail of second draft business plan	
12/05/05	Scottish Water Board presentation on key strategic issues	
16/05/05	Publication of high-level summary of second draft business plan	
30/05/05	WICS' response to business plan and implications for customers	

Our publication 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1.

In this chapter we focus on the first draft business plan.

Guidance issued to Scottish Water on the first draft business plan

We issued detailed guidance to Scottish Water on the format and content of the plan in order to ensure that we would receive the information necessary for us to set charge limits.

Our guidance for the first draft business plan was similar to that which Ofwat uses for the companies south of the border. However, we took full account of the Scottish context in framing our information requirements. For example, we did not consider it necessary to include a detailed asset inventory and cost base analysis.

The guidance divided the business plan into the following parts:

Part A: Overview

Part B: Detailed supporting information

B1: The business environment and the longer term

B2: Improving efficiency

B3: Maintaining service and serviceability

B4: Quality enhancements

B5: Supply/demandB6: Service delivery

B7: Financial (including financial model outputs)

Investment plan

We provided specific guidance to Scottish Water for each section of the business plan.

Our guidance included a number of tables and definitions that specified the information required. This information covered the full range of costs that Scottish Water was likely to incur.

Submission of the first draft business plan

Scottish Water submitted its first draft business plan to this Office and to the Scottish Executive on 29 October 2004. It also provided a short public summary. The structure of the business plan was consistent with the guidance. Scottish Water also provided a few additional sections.

In Part B of the business plan (which contains the detailed supporting information) Scottish Water added an additional section (B9). This section provided information about the anticipated effect of the introduction of a framework for retail competition on Scottish Water's operations. Scottish Water believed that this information could be helpful.

Scottish Water also provided a separate document entitled 'Special factors'. This document highlighted the areas in which Scottish Water considered that its operating costs were necessarily higher than those incurred by other water and waste water companies against which they could be benchmarked.

The overview in the business plan contained a summary of Scottish Water's proposed investment strategy and its pricing proposals. It also contained the key assumptions that underpinned the level of charges it believed was required.

Key messages from Scottish Water's first draft business plan

Scottish Water included the following in its first draft business plan. These were summarised in Part A: Overview (entitled Strategy in the business plan).

- Scottish Water had sought to strike a balance between the level of charges that it would be seeking to impose on customers, the scale and pace of investment in the infrastructure and the level of additional borrowing that would be required from the Scottish Ministers.
- The key priorities identified by Scottish Water over the period 2006-10 were to maintain or improve existing services, reduce the risk of sewage flooding and improve drinking water quality.
- These priorities had been established after conducting independent customer research and

working closely with the Water Customer Consultation Panels.

- In order to meet these priorities, Scottish Water was proposing a substantial investment programme amounting to £2,211 million over four years. This equates to £229 per property in Scotland.
- This level of investment would require price increases of 5% (in real terms) over the period 2006-10.
- The level of borrowing would also need to increase by a further £712 million.

Part B of the business plan then provided the detailed supporting information.

The special factors document sought to justify Scottish Water's view that its allowed operating costs should be significantly higher than those predicted by direct comparisons with other water and waste water companies. The special factors that Scottish Water identified were as follows:

- The Scottish population is spread over a wide geographic area, including many islands. This requires increased travel and a higher number of assets to service smaller communities.
- General overheads for utilities, materials and services are greater. This reflects the fact that the operating costs of companies providing these services in rural Scotland are higher.
- There are higher levels of household debt due to the poor collection records of local authorities and high levels of unemployment.
- Historically there have been lower levels of investment in the water and waste water assets.

The role of the Reporter

The Reporter is the independent auditor of information submissions from Scottish Water⁷⁸.

The Reporter and his team play a significant part in the business plan process. The Reporter's role is to review, audit and verify the information submitted in Scottish Water's first draft business plan. This mirrors the situation in England and Wales, where the Reporter has played an important role in establishing a robust regulatory regime.

We asked the Reporter to ensure that Scottish Water's overview in Part A of its business plan was consistent with the detailed information in Part B of its business plan. We also required the Reporter to conduct a detailed audit of the costs and information in the first draft plan and a review of the overall soundness of Scottish Water's proposed strategy.

The Reporter prepared an audit plan which detailed how he proposed to carry out his review of Scottish Water's business plan. This audit plan was discussed with Scottish Water to ensure that the audit process would be as efficient as possible.

A key element of the Reporter's review is to scrutinise the capital investment programme proposed by Scottish Water. The Reporter audited a sample of the programme. He challenged the scope of requirements, the proposed solutions and the basis of cost estimates for the specific schemes.

The Reporter submitted his report to us in January 2005. The key findings of the Reporter were as follows:

- A number of elements of Scottish Water's proposed investment programme had been over-costed (such as expenditure projections on waste water treatment works and leakage reduction works).
- Scottish Water's asset inventory and other related information was not fit for purpose and further work was required to enable accurate projections to be made.
- A number of Scottish Water's costings were not supported by sufficient documentary evidence, for example the property figures for the base capital maintenance expenditure projections.

⁷⁸ For a full explanation of the Reporter's role see Volume 2, Chapter 15 of our methodology consultation.

The conclusions on special factors were reached by comparing Scottish Water's position with those of four companies in England and Wales. The Reporter considered that this was not a sufficiently representative sample.

Response to the first draft business plan submission

In the timeline for the Strategic Review, which we published in our methodology document⁷⁹, we included the following events after receipt of the first draft business plan:

- a workshop to clarify our understanding of the plan;
- an opportunity for the Scottish Water Board to present its first draft business plan; and
- publication by Scottish Water of a summary of its business plan.

At the time of submitting its first draft business plan, Scottish Water asked for further clarification about the role of the workshop and the format of both the Board presentation and the published summary. Our letter to Scottish Water on these issues is available on our website⁸⁰.

First draft business plan workshop

The business plan workshop was organised to allow us to discuss areas of Scottish Water's business plan which we did not fully understand or where additional information would be useful. This included the size of its proposed capital investment programme, the deliverability of this programme given the likely overhang from Quality and Standards II, and its customer research.

Scottish Water Board presentation

The Board of Scottish Water presented its business plan to the Commissioner in Stirling on 23 November 2004. We had asked that the presentation should:

 reflect the thinking behind Scottish Water's overall business plan strategy;

- prioritise presentation of the information according to its relative importance to the review of charges;
- address Scottish Water's role in ensuring that incentive-based regulation worked in the public sector; and
- address the Reporter's concerns regarding Scottish Water's investment programme.

Following the presentation, we asked a number of questions to clarify our understanding of Scottish Water's proposed strategy.

Publication of public summary

On 3 December 2004 we issued a press release to accompany Scottish Water's publication of its summary business plan. We noted that although Scottish Water projected an increase in charges of 5% in real terms (13.6% nominal), we did not believe that such an increase was likely to be required. This view reflected our detailed analysis of Scottish Water's first draft business plan.

Summary

Scottish Water's first draft business plan represented Scottish Water's first opportunity to advise us of its strategy for the future, both in terms of investment in the infrastructure and the charges which it sought to impose on its customers. It was therefore an important input to the Strategic Review of Charges 2006-10.

In its first draft business plan, Scottish Water proposed an investment programme of more than £2.211 billion. It was said that this level of investment would require charge increases of 5% (in real terms) over the period 2006-10. The level of borrowing would also increase by a further £712 million.

Our analysis of the first draft business plan led us to conclude that customers' bills would not have to increase by more than the rate of inflation.

⁷⁹ See our publication, 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1 of our methodology consultation.

⁸⁰ www.watercommissioner.co.uk

Section 3: Business plans and guidance Chapter 13: The Reporter's views on Scottish Water's first draft business plan

Introduction

As part of the Strategic Review process, the Reporter for the water industry in Scotland, Mr David Arnell of Black and Veatch, has carried out a review of Scottish Water's business plans.

The Reporter is an independent auditor who reviews most aspects of Scottish Water's information submissions. This includes auditing both Scottish Water's Annual Return and its Business Plan submissions, as well as scrutinising the costing, scope and content of the proposed investment programme. Scrutiny by Reporters has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

This chapter starts by explaining the role of the Reporter. It goes on to detail the Reporter's findings from his review of Scottish Water's first draft business plan, which was submitted in October 2004.

The role of the Reporter

The role of regulatory Reporter was first created in 1989 at the time of privatisation of the water industry in England and Wales. As part of the privatisation process, it was decided that water companies would submit business plans and annual returns to the economic regulator. These submissions provide the financial, customer service and asset performance information that underpins the regulatory process. To ensure the integrity of this information, the role of regulatory Reporter was established with the remit of auditing much of the information provided to the regulator by the companies and highlighting any issues or inaccuracies.

The Reporter's role was first described in the 1990 Water Act. Over the years the role has been extended. The current remit in England and Wales is described more fully in Ofwat's publication 'The Reporters Protocol'82. The document states:

"The reporters act as professional commentators and certifiers on the regulated activities of the

companies. They ensure that company regulatory information is consistent, comparable, reliable and accurate.

The reporter's role is to assist Ofwat to fulfil its statutory duties. The reporter's primary duty of care is to Ofwat. The reporter also has a duty of care to the company."

The Reporter is usually a consultant engineer with many years of experience in the water industry. The Reporter employs a team of experts, depending on the work to be done. Typically these are water and waste water process and conveyance specialists although the Reporter may employ other experts such as statisticians or market research specialists when needed. As a technical person the Reporter does not review the financial accounts, which remain the domain of the financial auditors. However, he does review aspects such as depreciation policy, where he works closely with the financial auditors.

Given resource limitations, the Reporter typically carries out sample audits of the regulatory submissions, usually selected on the basis of materiality. This means that certain parts of the submission may not be reviewed at all. The samples selected do, however, provide sufficient information to allow the Reporter to give an informed view of the quality of work that has gone into the submission.

The objective of the Reporter's work in Scotland is primarily to understand the quality of the data underpinning Scottish Water's conclusions, as well as the methods and procedures it has used. This allows the reporting team to comment on the quality of the work that has been undertaken and how this impacts on the reliance that can be placed on the information by the regulator. Given the limitations of the work that can be done by the reporting team the Reporter cannot state that any quantitative information given in the submission is without error or is 'correct'.

The Reporter prepared an audit plan which detailed how he proposed to carry out his review of Scottish Water's

⁸¹ This chapter was written by the Reporter although purely textual edits were agreed with the Reporter. WICS had no further input into the content of this chapter.

⁸² See Ofwat publication MD 185 'The Reporter's Protocol' which is available on its website at www.ofwat.gov.uk

business plan. This audit plan was discussed with Scottish Water to ensure that the audit process would be as efficient as possible.

A key element of the Reporter's review was scrutiny of the capital investment programme proposed by Scottish Water. The Reporter audited a sample of the projects in this programme. He challenged the scope of requirements, the proposed solutions and the basis of cost estimates for specific schemes.

The Reporter's findings

This section provides the findings of the Reporter's review of Scottish Water's first draft business plan. The Reporter's views form an important part of the assessment of the validity of Scottish Water's regulatory submissions. It should be emphasised, however, that the Commissioner, in coming to the conclusions set out in this draft determination, has used a number of information sources to assess Scottish Water's business plans. These include the views of the Reporter. No one information source has been used to the exclusion of others.

Categorisation of capital investment

Capital investment can be broadly categorised as:

- Capital maintenance: investment needed to maintain Scottish Water's existing assets. Examples include replacement of worn out pipes and sewers and maintaining structures and plant in treatment works.
- Management and general: investment needed to provide for the administration of the organisation and to maintain its non-operational assets.
 Examples are investment in IT systems and vehicles.
- Quality: investment needed to meet improvements in the quality of drinking water and waste water discharges to the environment. Examples would include new and improved treatment works.

- Supply demand balance: investment needed to meet growth in demand for water or waste water services or to meet restrictions in supply. Examples would include new reservoirs or treatment works which are required to meet increases in demand.
- Enhanced levels of service: investment needed to fund improvements in the levels of service provided to customers. Examples would include investment on reducing sewer flooding or odour control.

Investment can also be split between investment needed for the water service and for the waste water service. A further allocation is between investment needed for underground pipe systems used to distribute and collect water and waste water (infrastructure assets) and other assets (non-infrastructure assets).

These categories are used to summarise the Reporter's findings.

Capital maintenance expenditure needed to maintain water infrastructure assets

Scottish Water has used a complex optimising tool to estimate both its water and waste water needs. The model is based on a number of failure relationships, the most important of which are age-failure relationships for different types of water pipe. The Reporter noted that the model used was a high-level strategic model and not asset-specific. When work is more accurately targeted during implementation this could result in fewer pipes needing replacement than was estimated by the model. However, it was also recognised that the proposed replacement rate was reasonable and was lower than in recent years.

Scottish Water has included expenditure for reducing leakage to levels where the costs of leakage control are the same as the operating costs needed to produce additional water (this is known as the 'short run economic level of leakage'). This methodology is correct where new water resources are not required immediately. The Reporter noted that the calculation of the short run economic level of leakage was uncertain because of a lack of appropriate information and that

the unit cost rate that Scottish Water used was not well supported.

Capital maintenance expenditure needed to maintain waste water infrastructure assets

Scottish Water's estimates under this heading are based on:

- the cost of maintaining sewers;
- the cost of reducing levels of sewer flooding; and
- the cost of maintaining combined sewer overflows (overflows that operate at times of high rainfall and which are sometimes called unsatisfactory intermittent discharges).

The cost of reducing levels of sewer flooding has been apportioned between capital maintenance and enhanced levels of service as newly flooded properties would require expenditure even if work to reduce flooding incidents was not undertaken.

Scottish Water calculated the cost of maintaining its sewers using the same model that it used for water mains, but using relationships between age, blockages and collapses derived from historical records. The outcome of this analysis suggested that Scottish Water should be focussing its efforts on replacing small diameter sewers, including sewer laterals. This is very different to Scottish Water's current strategy and is also different to common practice across the industry in recent years. Normally, waste water capital maintenance is focussed on maintaining large diameter sewers in sensitive areas such as town centres.

The Reporter therefore suggested that Scottish Water should review this strategy. In particular, it was suggested that the practicalities of developing a major strategy based on identifying those sewer laterals at risk of blockage without undertaking pilot studies should be carefully considered. The Reporter also suggested that Scottish Water should consider the possible increase in risks following lower levels of maintenance on larger diameter sewers.

Following the review of sewer flooding it was concluded that Scottish Water's costs were reasonable. It was suggested that Scottish Water should obtain additional information on rates of emerging properties in order to reduce the uncertainty in this aspect of its estimate.

Scottish Water assessed the maintenance costs for combined sewer overflows and other sewer structures on the basis of asset valuation and asset lives. This assessment assumed an average rate of expenditure over the life of the assets based on the assumption that the assets are evenly distributed by condition and age. It was suggested that this assumption should be justified by condition surveys or by comparison with historic levels of expenditure.

Capital maintenance expenditure needed to maintain water and waste water non-infrastructure assets

The capital maintenance requirement of Scottish Water's water treatment works is a significant part of its capital spend. Scottish Water has based its estimates on a detailed review of requirements at the largest 36 works and, for the smaller works, on a generic model that uses relationships between age and condition and replacement needs. The latter method depends on an accurate record of the extent, age and condition of the relevant assets (the asset inventory).

The Reporter's review identified a number of shortcomings in both methods. The first method did not fully take into account the overlap between currently proposed work and future work or between the quality programme and the capital maintenance programme. The scope of work was sometimes unclear and was therefore wrongly interpreted by the cost estimators. The second method was considered to be inaccurate due to deficiencies in the asset inventory. It was recommended that both methods should be reviewed and improved for the second business plan submission.

Expenditure on management and general items

Management and general requirements comprise capital investment on vehicles, health and safety, property, information technology, telemetry (automatic transmission of operational information from assets located over a wide geographic area back to a central control room), scientific systems such as laboratories, as well as the expenditure needed to obtain asset information. In total, the expenditure in these areas can be significant.

Following the review of Scottish Water's estimates the Reporter concluded that in some areas the estimates were not supported by good quality records and therefore the estimates were subject to significant uncertainty in those areas. It was also noted that Scottish Water's estimate of the expenditure needed to obtain better quality information was significant. While it was accepted that Scottish Water did need to improve the quality of its data in many areas it was suggested that Scottish Water should endeavour to improve the support of its estimates where possible and consider benchmarking its expenditure against other water utilities.

It was noted that Scottish Water proposed to change its current policy of running its vehicle fleet's vans for five years to a policy based on a three-year life. It was suggested that Scottish Water should justify this change of policy using standard appraisal techniques.

It was noted that Scottish Water intended to increase its telemetry coverage to many of its smaller assets. While it was accepted that much of this was driven by the requirements of the quality regulators it was suggested that Scottish Water should put forward a robust business case for those elements not driven by regulation.

Expenditure on quality improvements in the water distribution system

Scottish Water proposed to implement a number of projects to improve certain water quality parameters in some zones where the condition of its water mains was

affecting water quality. It was noted that Scottish Water was still developing its methods for estimating this work and the initial estimates were not large. The decision was therefore taken not to review this work for the first draft business plan.

In addition to these projects, the Scottish Environment Protection Agency (SEPA) proposed to reduce Scottish Water's allowable water abstractions in some areas to meet the requirements of the Birds and Habitats Directive and Water Framework Directive of the European Union. The Reporter noted that while SEPA had confirmed that Scottish Water had interpreted the guidelines correctly, until SEPA had undertaken its own river modelling and defined its exact requirements at each site the estimates were subject to uncertainty. He also noted that Scottish Water had not undertaken detailed studies at each site to define the exact requirements but had applied an average cost per million litres of water required. Whilst accepting that detailed feasibility studies could not be expected at this stage of planning it was noted that this approach added to the uncertainty of the answer.

Expenditure on quality improvements in the waste water system

Expenditure under this heading relates to work needed to rectify a large number of unsatisfactory combined sewer overflows (CSOs) that overflow waste water from the sewerage system in time of high rainfall and can, in some cases, cause environmental damage. The technical solution, where environmental impact justifies the expenditure, typically comprises the provision of storage at the CSO to capture the overflows and return them to the sewers following the storm, together with the provision of additional 'compensation' storage at sewage treatment works.

The calculation of storage requirements requires a computer 'hydraulic model' to be constructed. Hydraulic modelling is usually carried out at the detailed design phase of the project. For the high-level estimates in its business plan, Scottish Water developed an 'algorithm' relating storage volume to population in the catchment. The Reporter had a number of concerns which, in total,

indicated that the overall cost estimates might be high. He recommended that:

- the principles regarding consents should be agreed with SEPA;
- more analysis was required to demonstrate the need for compensation storage at sewage treatment works;
- the algorithm used to calculate storage was checked; and
- the effect of some work being undertaken during the Quality and Standards II period was assessed.

Expenditure on quality improvements at water and waste water treatment works

The quality programme for water treatment works comprises a significant part of Scottish Water's capital programme. Because of the numbers of water treatment works involved in the programme Scottish Water applied standardised solutions to common problems. The cost estimates were built up from cost-capacity relationships of process elements, based on past projects.

The Reporter's review concluded that the resulting cost for the programme significantly over-estimated the actual likely cost. It was recommended that Scottish Water should review its costs in relation to:

- the correlation of the standard solutions and actual site conditions;
- the relationship between capital maintenance and quality expenditure; and
- the applicability of some cost-capacity relationships to the sizes of Scottish Water's water treatment works.

The review of waste water treatment works reached similar conclusions.

A significant part of the waste water costs also related to the expenditure needed to treat additional sludge, mainly arising from the need to add ferric salts to the main process units. Again, the Reporter concluded that the sludge programme was likely to be over-estimated. He also recommended that Scottish Water should produce a full business case to support the need for additional sludge treatment in order to minimise sludge tanker movements.

Expenditure to maintain the supply/ demand balance

Expenditure to maintain the supply/demand balance comprises two parts:

- Expenditure to remove a lack of capacity in some of Scottish Water's assets in order to allow new household and commercial development to proceed.
- Expenditure in some resource zones (geographic areas which are supplied by a number of resources linked such that the risk of supply failure to all customers in the zone is similar) to meet an agreed minimum standard of resource availability in drought years.

In order to assess the expenditure for development constraints, Scottish Water developed a database of potential developments. It then estimated the additional water and waste water needs arising from the developments and related these to the current capacity of the existing treatment works. The calculations made a number of assumptions about the number of developments that would actually take place, the true capacity of the treatment works, the costs of adding new capacity to the works and the amount of waste water that could be treated at existing PPP plants. The PPP plants currently treat significant amounts of Scotland's waste water.

The Reporter considered the assumptions made and reached the conclusion that the resulting estimates were very uncertain. He also concluded that the uncertainty was such that a reasonable estimate would probably only become possible when the programme had been running for some time.

Scottish Water's estimates for meeting supply/demand balance deficiencies in some water resource zones were

based on hydrological water resource yield calculations, projections of future water and waste water demands, and calculations of the resulting supply/demand gap and the cost of rectifying the gap. The latter was based on a simple cost per million litres of additional resource provided, rather than detailed engineering solutions.

The Reporter concluded that generally the yield calculations had been competently done. He also concluded that the unit rates of providing new resource were reasonable. However, the Reporter's review concluded that calculations to decide on the optimal point at which the cost of additional resource is less than the cost of additional leakage control had not been carried out. In some cases additional leakage control might be advantageous.

It was also noted that the costs were based on average unit costs rather than site-specific solutions and that Scottish Water had not allowed for any possible additional treatment. While it was accepted that in the latter case it was not possible to undertake detailed feasibility studies, the Reporter's overall conclusion was that the final costs were subject to uncertainty.

Expenditure on enhanced levels of service

This investment category, which is generally relatively minor in nature, was not reviewed for the first draft business plan.

Additional operating expenditure

As directed in the guidance, the Reporter carried out a brief review of Scottish Water's assessment of the additional operating costs resulting from the proposed investment. He concluded that Scottish Water should reappraise the estimates of new operating expenditure to ensure that they were consistent with current operating costs.

Scottish Water also prepared a submission on the special factors that it believed resulted in higher operating costs in Scotland than in England and Wales. The Reporter's review of this submission concluded that

Scottish Water had undertaken analysis work as described in the submission. However, the Reporter suggested that Scottish Water should address a number of material points with regard to this submission prior to producing the second draft business plan.

Section 3: Business plans and guidance Chapter 14: Review of the Ministerial Guidance

Introduction

This Strategic Review of Charges is being undertaken at a time of legal transition. It was, like the previous Review, commissioned by Ministers under the Water Industry (Scotland) Act 2002. However, unlike that Review, it is expected to result not in advice to Ministers on charges but rather in a charge determination made under the Water Services etc. (Scotland) Act 2005. In this section, we set out a description of the transitional regulatory framework under which we have undertaken the current Review.

Given that the relevant provisions of the 2005 Act are only expected to be commenced at the beginning of July, the legal basis for the Strategic Review of Charges, and for this document, continues to be the 2002 Act in its current form. However, Ministers have expressly instructed the Commissioner to undertake this Review in a manner consistent with the planned introduction of the new statutory regime and the making of a charge determination by the new Commission.

We have interpreted this requirement to mean that we should produce a draft determination which, as closely as possible, resembles the draft which the new Commission would itself produce under the incoming legal framework. In particular, we have sought to apply the decision-making standards of new section 29C in reaching our conclusions and, in doing so, have also had due regard to the proposed section 29D statement and section 56A directions published by Ministers (described collectively in this draft determination as the 'Ministerial Guidance') in February 2005.

It is important to highlight how this Guidance fits into the overall framework for the Strategic Review of Charges 2006-10. Having received the Ministerial Guidance in February 2005, Scottish Water then set out in its second draft business plan its view of the resources it needed to deliver the ministerial objectives. This draft determination sets out our view of the lowest reasonable overall cost of delivering the Ministers' objectives.

Overview of the Guidance

In December 2004, we wrote an open letter to Scottish Ministers which explained that our preliminary analysis

suggested that customers could look forward to both a further significant increase in the investment programme and to stable prices.

In February 2005, Ministers published proposed texts of a section 29D statement and of a set of section 56A directions which they intended formally to make following enactment of the 2005 Act.

The proposed section 29D statement sets out two objectives, namely, that Scottish Water should achieve the maximum affordable improvements in public health and environmental protection, and support housing in communities across Scotland through investment in new water and sewerage capacity. The new Commission should determine charge limits that will enable Scottish Water to achieve its objectives and improvements in its operating performance on the basis of charges that are affordable and stable across the review period and sustainable in the long term. In particular, Ministers have indicated that an objective for the Commission is to keep average charges constant in real terms during the review period. However, stable charges are not to be secured at the expense of Scottish Water's longer-term financial stability: Scottish Water's financial strength should be maintained over the period 2006-10, or if possible improved slowly over that time.

The proposed statement also provides that the maximum sum that Ministers have set aside for lending to Scottish Water in each of the years 2006-10 is £182 million, pending the charge determination and the new Commission's decision on the sustainable level of borrowing required to underpin the determination and Scottish Water's investment programme. In addition, it states that public expenditure support to Scottish Water in the provision of its core services throughout the period 2006-10 will take the form of lending alone and that no grant will be paid in respect of these services during the period.

In their proposed section 56A directions, Ministers require Scottish Water to be funded to enable it to deliver a series of essential investment objectives during the period 2006-10. Ministers have also established a further series of desirable objectives which they require Scottish Water to deliver to the extent that it is reasonable to

expect that they can be delivered efficiently and without projected charges to customers in the period to 2010 rising by more than levels of inflation.

Principles of charging

The Ministerial Guidance included information about the principles of charging that we needed to take into account in preparing our Strategic Review. We provide below a summary of the key points raised in the Ministerial Guidance, starting with two of the most significant principles in the Guidance, points 20 and 21 of the proposed section 29D statement.

- 20. The WIC has stated his belief that customers should not be asked to pay twice for the same benefit. The Executive endorses this principle on the basis that customers should be asked to meet additional costs beyond those allowed for in a charges determination only where these have arisen as the result of external factors beyond the control of Scottish Water. The Water Services etc. (Scotland) Bill provides a mechanism whereby a determination can be reviewed in such circumstances.
- 21. This approach protects the position of customers. To provide similar protection for public expenditure, the Executive confirms that it will not increase its lending to Scottish Water to meet the costs of objectives already funded by a determination. This will ensure that the determination will provide Scottish Water with firm financial limits for the regulatory period in question. The Executive will work with the WIC and the quality regulators to monitor Scottish Water's performance against agreed targets to ensure that any threat to the financial limits or to the achievement of the Executive's objectives within these limits is identified and addressed satisfactorily at an early stage.

Point 20 is fundamental to achieving value for money for customers. It expresses a clear view that customers should not be asked to pay twice for the same benefit unless the matter is subject to a material change as envisaged in the procedure set out in section 29F of the 2005 Act. Apart from this, however, recent history

includes many examples where customers of the Scottish water industry have paid twice for the same benefit. Publishing the detailed investment plan (including on our website) will ensure that customers can understand the benefits that ought to be delivered.

Point 21 is also key. The Scottish Executive has now said very clearly that it has placed a limit on Scottish Water's overall borrowing. As recently as the last Strategic Review of Charges in 2001, Scottish Water could seek to access additional borrowing even if this was not consistent with customers' interests. Such additional borrowing would add to the level of charges faced by future customers without improving customer service or quality.

In point 23 of the proposed statement, Ministers make it clear that when they talk about charges not increasing in real terms, they are referring to the average of all charges.

23. Achieving constant average charges in real terms could be consistent with some charges rising above the rate of inflation and others falling in real terms, for example where tariff rebalancing is justified. Where this is necessary, the Executive requires the Commission to minimise the impact on those customers affected by any increase. It should set charge limits that deliver the most regular and smooth charges profile possible in the circumstances. In particular, the Executive requires the Commission to avoid reductions in charges one year if such a reduction could not be sustained, or if they would need to be followed in subsequent years by an increase in real terms. The Commission should ensure, where a permanent increase in a given tariff is necessary, that the increase is phased over the review period unless there is a more effective means of minimising the impact of the increase.

This principle is further developed in the Ministerial Guidance where it discusses the method by which cross-subsidy between households and non-household should be unwound. As an illustration of the effect of point 23, it is possible that metered water charges could have increased in real terms and standing charges could fall slightly. On average there would be no change.

We are not aware, however, of any material imbalances within our tariff baskets. We will therefore require Scottish Water to justify changes to individual tariffs within a tariff basket that are not the same as the overall charge cap for the basket.

Point 24 of the proposed statement, re-emphasises the principle that stable prices should not be achieved at the expense of future customers.

24. The Executive does not wish stable charges in the period 2006-10 to be secured at the expense of Scottish Water's longer term financial sustainability. That is to say, it does not wish charges to be kept low in the medium term by building up debt whose servicing costs would add to Scottish Water's cost base and would result in charges in the longer term being higher than would otherwise have been the case. To safeguard the position of customers in the longer term, the Executive considers, as a minimum, that Scottish Water's financial strength should be maintained over the period 2006-10, and that, if possible it should be improved slowly over that time. Most respondents to Paying for Water Services who commented on this point, and the majority of those consulted by MRUK, appeared to agree with this approach.

This is an important point. As recently as in 2000, West of Scotland Water Authority used to highlight the fact that its charges were lower than that of Thames Water, and the lowest in Great Britain. This was, however, only achieved by borrowing at a rate that was not sustainable.

In point 25 of the proposed statement, the Scottish Executive states that it will make debt available of up to £182 million each year in terms of new borrowing.

25. The level of borrowing that would be consistent with long-term financial sustainability will be dependent on the maximum size of the capital programme that the Commission judges Scottish Water to be capable of delivering efficiently. Therefore, the Executive wishes the Commission to determine the amount of lending from the Executive in each year of the review

period that would be necessary to support a capital programme of the scale set by the Commission and that would be consistent with a gradual and steady improvement in the long-term financial sustainability of Scottish Water. This requirement is subject to the amount of lending by the Executive in any one year in support of these objectives being no greater than £182 million, which is the maximum sum that the Executive has set aside for lending to Scottish Water in each of the years 2006-10, pending the charge determination and the Commission's decision on the sustainable level of borrowing required to underpin the determination and the investment programme.

In point 26 the Executive also makes available any unused borrowing from the 2002-06 regulatory control period. The Executive has made it clear that the Commission should set price caps that should require only a prudent level of borrowing. This means that not all of the £182 million that is made available should necessarily be used. The actual level of borrowing will depend on the size of the investment programme and on the mix between genuinely new incremental investment and replacement investment as determined by the Commission.

In point 32, the Executive lays out its plans to make water charges more affordable. We believe that these changes will have a material impact on the affordability of water charges and that they should also help reduce the bad debt costs incurred by Scottish Water.

32. The Executive has reflected carefully on these concerns. It has concluded that the risk to some of the most vulnerable in the community from ending the single adult discount is significant and there is no feasible means of addressing it. Consequently, it has decided to retain this discount and to modify its proposed new discount to reflect this. The intention now is to introduce a matching 25% discount, which will be available to households that comprise two or more adults and which receive CTB. The cost of this discount will be met by proceeding as proposed with the abolition of the discount on water charges for second homes.

In point 37, the Executive identifies the extent to which cross-subsidies should be unwound.

37. The consultancy work undertaken for the Executive by Stone and Webster was intended to establish and analyse the evidence of any imbalances between the two sectors and to recommend what, if any, action should be taken to address them. Stone and Webster's report concludes that Scottish Water over-recovers costs from non-household customers. The most robust estimate that the report provides is that the over-recovery results in households paying £44 million a year less for water supply services than it costs to provide them with these services.

The relatively complex analysis which underpins this work is available on the Executive's website. It concludes that there is likely to be at least £44 million of cross-subsidy. It is therefore appropriate to unwind this cross-subsidy over the regulatory control period.

Non-households will, in general, see charge increases that are lower than those faced by households. In point 41 the Executive comments on the impact of unwinding the cross-subsidy.

41. The Executive has discussed the matter with the WIC, who has advised that it should be possible to rectify the imbalances identified by Stone and Webster as most suitable for addressing in the period 2006-10 without average household charges having to increase in real terms. In light of this advice, the Executive requires the Commission to determine charge limits for 2006-10 in such a way that these imbalances are corrected without causing average household charges to increase in real terms. In doing so, the Commission should have regard to the requirement that any change in tariffs is phased over the review period unless there is a more effective means of securing the change while maintaining stability in household charge levels.

This was a signal that non-household charges were going to decrease in real terms over the regulatory control period.

Point 42 confirms that the benefit from unwinding the cross-subsidy of £44 million should be spread equally amongst non-household customers.

42. The counterpart to this exercise will be a reduction in the amount paid by non-household customers. The Executive requires the Commission to allocate the benefits of this reduction equally across all nonhousehold customers.

In point 44, the Executive makes it clear that it does not want there to be any further increase in the incentive for higher banded households to move to a meter.

44. In the meantime, the Executive requires the Commission to set charges in such a way that any costs of retaining the link between household water charges and Council Tax bands, and the Executive's proposals for a new water charges discount, are both funded out of the generality of charges.

It is already attractive for many higher banded properties to switch to a meter and any further increase in this incentive could accelerate the switching of higher banded households to meters. This has had a negative impact on household rateable value customers in England and Wales. The switch to meters has pushed up bills for customers who are charged on the rateable value of their property in England and Wales.

Point 49 highlights a change in the arrangements for paying for the costs of local connections.

49. The effect of the regulations in respect of Part 3 costs means that from April 2006 there will be a requirement, where an enhancement to a Part 3 asset is required, for developers to fund the excess costs of the enhancement above the contribution that Scottish Water will make in respect of the income that it will receive for the development. Consistent with that policy objective, the Executive requires the Commission to ensure that the level of borrowing that it sets for Scottish Water is sufficient to enable Scottish Water to fund the costs that it will incur in these cases through borrowing, rather than charge income, with reference to the cost of funds to

Scottish Water and the period over which the contribution is to be amortised.

This change brings Scotland into line with the rest of the UK. In effect, the developer will have to pay the costs of connecting to the network. The part 4 costs (which relate to any capacity constraint at water treatment works, sewage treatment works, the source, etc) will remain social costs. These rules are similar to the approach that is used by other utilities. Scottish Water will still make a contribution to the developer, but the sum will reflect the benefit that Scottish Water will receive from that additional customer coming onto the network.

Point 55 sets out the Executive's approach to metering of non-household customers.

55. Responses in respect of un-metered premises were much less positive. Many non-household customers argued that metering, despite the costs associated with it, was the only effective means of giving adequate transparency to the charging regime and of providing a worthwhile incentive to conserve water resources. The Environment and Rural Development Committee of the Parliament echoed this point in its stage 1 report on the Water Services etc. (Scotland) Bill. The Committee recommended that the introduction of metering generally across the non-household sector should become a longterm objective for the Executive. The Executive accepts the strength of these arguments and agrees that a commitment to achieving full metering of nonhousehold premises is appropriate.

The responses described in the proposed statement are perhaps slightly surprising. It seems that there is significant scepticism about how fair the rateable value system is as a method of charging for water. Many customers suggested that metering would ensure that there was a level playing field for businesses. The Executive has made a commitment to metering of non-household customers in the long-term. We doubt that this can be fully implemented by 2010. The Water Services etc. (Scotland) Act 2005 establishes a framework for retail competition, which is timetabled to be implemented from April 2008. The

separation of the retail function should create an incentive for retailers to offer value added services such as smart metering to non-household customers.

Guidance on investment objectives

The guidance on investment objectives contained in the Ministerial Guidance reflects the outcome of the Scottish Executive's consultation, *Investing in water services* 2006-14.

A key element in the Guidance is the distinction that is made between the outcomes of investment that Ministers have determined to be 'essential' and those that are 'desirable'. Table 14.1 from page 2 of the guidance on investment objectives identifies the Executive's areas of investment and over-arching objectives. The table is repeated as Table 14.1.

Table 14.1: Essential investment objectives for Scottish Water 2006-14

Issue	Objective
Capital maintenance	Maintain service standards for customers to levels forecast for March 2006
Improving the environment	Contribute to the improvement in the quality of water in 530 kilometres of water bodies ⁸³
Improving drinking water	Improve drinking water quality for 1.5 million people across Scotland
Development constraints	Provide sufficient strategic capacity to meet the requirements of all estimated new development
Tackling malodour at waste water treatment works	Minimise odour nuisance at 35 waste water treatment works
Addressing sewer flooding ⁸⁴	Remove a net 1,140 properties at risk from internal sewer flooding

The Ministerial Guidance is much more specific about the outcomes to be delivered by Scottish Water than the guidance which was provided by Defra to Ofwat for its determination of prices in 2004.

One of the difficulties in measuring the outputs of investment is that any asset intervention will typically result in marginal improvements to the asset beyond, say, improving compliance with public heath standards. It is a misrepresentation, for example, to say that the Quality and Standards II programme did not improve the assets

⁸³ Water bodies include lochs, rivers, estuaries and burns. SEPA looks at each specific discharge to a water body and assesses what is required to ensure compliance with legislation. It has undertaken a great deal of work to identify the areas where it believes that Scottish Water is a major polluter.

⁸⁴ The issue of general flooding is not within Scottish Water's ambit, it is partly a national issue and partly a local issue.

of the water industry in Scotland. Quality and Standards II allowed sufficient funding for capital maintenance to ensure that had there been no other investment during Quality and Standards II, we would have had the same level of service in 2006 as in 2002. However, Quality and Standards II also committed some £800 million to improve the quality of the assets. The assets should therefore be in much better shape than they were in 2002.

This is illustrated in Table 14.2, which establishes the base position for a range of 'serviceability' indicators for the Quality and Standards III period. ⁸⁵ These serviceability indicators describe Scottish Water's performance on a range of key performance measures which affect the service to customers.

Table 14.2: Capital maintenance serviceability indicators 2006-14

Serviceability indicators	National base position 2006-14 (measured annually)
Water serviceability indicator	
% Compliant zones for iron	83*
% Compliant zones for manganese	94*
Number of microbiological (total coliform) failures at water treatment works	90*
Number of properties on the low pressure register	12,957*
Number of properties with unplanned interruptions to supply > 12 hours	16,184*
Number of bursts per 1,000 km of mains	204*
Waste water serviceability indicator	
Number of properties at risk of sewer flooding ⁸⁶	1,603*
Number of properties internally flooded due to other causes	366
Number of failing waste water treatment works ⁸⁷	45*
Number of unsatisfactory intermittent discharges	867*
Number of pollution incidents ⁸⁸	555*
Management and general	
Fleet, scientific, property, IT, telemetry	Maintain to standards to be secured ⁸⁹ by Q & S II
Health and safety compliance	Secure compliance with all existing and known new legislation
Asset data	Enhance Scottish Water's data to a sufficient level to support the operation of the common framework approach and other aspects of the investment programme

These serviceability indicators will show an improvement over the period 2006-14, derived from drinking water quality, environment, growth or customer enhancement programmes.

Point 14 of the proposed section 56A directions makes clear the view that Scottish Water should be held to account for meeting asset performance levels that reflect both capital maintenance and enhancement investment.

14. Enhancements to the above service standards will be secured through additional water quality, environmental and other investment in improving services that also form part of the Ministers' objectives. In putting forward detailed plans for the delivery of their objectives, Ministers expect Scottish Water to quantify enhancement in service standards derived from other aspects of the programme, and thereby to establish in conjunction with the Water Industry Commission, biennial targets of asset performance throughout the period on the basis of the above types of measure.

The enhancements to levels of service on both the water and waste water services are clearly set out in paragraphs 15 to 31 of the proposed directions.

The Executive has set out a clear policy that should eliminate development constraints, as point 34 states:

34. Taking these matters into account, Ministers consider it essential to provide sufficient "strategic capacity" to meet all estimated new housing developments and the domestic requirements of commercial and industrial developments. Estimates of the scale of new development have been calculated drawing upon analysis of Scottish Executive Housing Trends data and an assessment of the likely development anticipated by local authorities. This analysis estimates a need to allow for an additional 120,000 new homes and 4,050 hectares of new commercial land over the SRC [Strategic Review of Charges]

⁸⁵ Extracted from the Scottish Executive's statement of 9 February 2005 "Investing in water services : objectives for 2006-14".

⁸⁶ The number of properties at risk of sewer flooding at least once in 10 years.

Based on the Control of Pollution Act – look-up table compliance (see http://www.sepa.org.uk/guidance/water/index.htm).

⁸ Baseline subject to clarification by the Scottish Environment Protection Agency.

⁸⁹ Standards achieved by the end of Quality and Standards II.

Strategic capacity or part 4 assets refer to Scottish Water's 'primary assets'; raw water intakes, water impounding reservoirs, water aqueducts, water pumping stations, water treatment works, waste water treatment works.

period. The Executive will review these estimates in light of any new or improved data that emerges subsequent to the review. If this results in the estimate being revised, the Executive will restate this objective in terms of the revised estimate. It will notify the Commission and Scottish Water of the restated objective, so that, for their respective functions, they can consider whether the restatement requires the Commission to conduct a review of its determination.

The Executive makes it clear that it intends to ensure that funding for Scottish Water will be sufficient to meet the relief of constraints at the strategic level. This means that if a developer is prepared to pay the cost to get connected then money will be available to ensure that any strategic bottleneck is resolved.

Odour has become an increasingly high-profile issue in recent months. This is addressed in point 45 of the proposed directions, which details the outcomes that are to be delivered:

45. In line with the recommendations made by the Quality and Standards Board and pending finalisation of the voluntary code of practice on odour control, Ministers require that action be taken to minimise odour at 35 existing waste water treatment works.

In accordance with this objective Ministers require that, during the period 2006-10, measures be implemented to minimise odour nuisance at a minimum of 14 waste water treatment works taking into account the principle of the best practicable means over the period 2006-10. The 14 sites to be decided by a forum comprising the Executive, Scottish Water, the WIC, local authorities and WCCP [Water Customer Consultation Panels] by reference to those causing the greatest impact and on which agreement exists on the required remedial action.

Similarly, Ministers require that during the period 2010-14, control measures be implemented to minimise odour nuisance at a minimum of 21 waste water treatment works taking into account the principle of best practicable means. The 21 sites to

be decided by a forum comprising the Executive, Scottish Water, the WIC, local authorities and WCCP by reference to those causing the greatest impact and on which agreement exists on the required remedial action.

We agree that odour is an important issue. Addressing odour fully may require renegotiation of the Public Private Partnership (PPP) contracts. We will return to the issue of PPP in Volume 5.

It is likely that the investment outlined in point 53 will be important for those who live in rural communities.

53. Ministers recognise the inconvenience, which can be caused by unplanned interruptions in the water supply. Accordingly, they consider that it would be desirable if there was a net reduction of 850 in the number of properties affected by unplanned interruptions in non-trunk mains by 2014. In establishing this objective, Ministers wish that by 2006-10 there will be a net reduction of 425 properties affected, and that by 2014 there will be a further net reduction of 425 properties affected. It is expected that delivery of this investment will improve the standard of service experienced by a number of smaller communities in the north west of Scotland.

The final key point raised in the Ministerial Guidance is covered in paragraph 56 of the proposed section 56A directions.

- 56. Ministers recognise that planning investment over an eight year period will promote value for money in the use of customers' and taxpayers' resources. Ministers also attach considerable importance to the establishment of effective monitoring and review mechanisms in order to ensure that the programme is delivered efficiently, "on time", and that it is sufficiently flexible to accommodate changes that may become necessary over time. For this reason, Ministers require that prior to commencement of the investment programme in 2006:
 - An investment monitoring group will be established to monitor the delivery of the

investment programme. This Group will be made up of Scottish Executive, SEPA, Drinking Water Quality Regulator, Water Industry Commission and Scottish Water who will meet on a regular basis to review progress on the capital programme, and that regulators will undertake detailed monitoring of those elements of the programme that fall under their auspices.

• Arrangements for making changes in the investment programme should be put in place that will allow Scottish Water and its regulators to utilise better information or respond to unanticipated or unpredictable events. These arrangements should allow Scottish Water, in discussion with its regulators, within the overall terms of the investment programme and costs, to change the means by which these objectives are to be secured – all to the benefit of customers. Where Ministers consider changing the investment objectives or wish to incorporate a new requirement, they will normally consult the parties to these arrangements.

Conclusion

Ministers have provided detailed guidance on their investment objectives for Scottish Water and on the charging principles to be applied in ensuring that Scottish Water is properly funded to meet those objectives. We have ensured that this draft determination complies with the Ministers' charging principles and sets out charges which enable Scottish Water to deliver all of the Ministers' essential investment objectives and as much of their desirable objectives as is compatible with the constraints on charges set out in the Ministerial Guidance.

Section 3: Business plans and guidance Chapter 15: Review of Scottish Water's second draft business plan

Introduction

This chapter reviews Scottish Water's second draft business plan. We described the importance of Scottish Water's business plans to the Strategic Review of Charges 2006-10 in Chapter 13. The second draft business plan supplements the information contained in the standard regulatory returns. Scottish Water sets out its strategy and objectives for the coming period in the second draft business plan. It supersedes the information contained in the first draft business plan.

The second draft business plan was particularly important since it represented Scottish Water's principal opportunity to explain the costs that it would incur in delivering the Ministers' objectives for the water industry. We have analysed this plan carefully in completing this draft determination.

In this chapter we first outline the process we have used to improve our understanding of Scottish Water's second draft business plan. We then provide a brief summary of some of the key messages from the second draft business plan. The chapter then concludes with a summary of our response to the plan.

Guidance for the second draft business plan

We issued detailed guidance to Scottish Water on the format and content of the second draft business plan. We amended the guidance that we had provided for the first draft business plan to take account not only of new information that we required but also areas where we considered that the guidance needed to be more specific.

The guidance also included work on accounting separation which had been undertaken for us by Ernst & Young LLP⁹¹. The main differences between the guidance for the first and second draft business plans were as follows:

 Tariff information – in the guidance for the second draft business plan we included a new section (B8) to collect detailed information on revenue and tariff

91 This report is available on our website www.watercommissioner.co.uk

issues. In particular, we were keen to understand Scottish Water's forecasts of changes in customer numbers and tariffs. This information would inform our development of the tariff baskets which we use to translate revenue caps into charge caps.

- Definition of retail costs the guidance required Scottish Water to produce regulatory accounting tables, including the split of activities between core and non-core, and between wholesale and retail. This requirement affected a number of the sections for submission including:
 - B4: Quality enhancements;
 - B5: Maintaining the supply/demand balance;
 - B6: Service delivery; and
 - B7: Financial projections and financial model input sheets.
- Output performance improvements we included a second new section (B9) which was designed to allow Scottish Water to explain an increase in total allowed operating expenditure to improve the level of service to customers. We asked Scottish Water to specify both the costs and benefits, including the improvement, the timing of the improvement and the means of measuring the improvement. We also sought evidence that customers were willing to pay for these improvements in the level of service.
- Definition of Quality and Standards II overhang we also expanded the guidance to collect information on the Quality and Standards II overhang. Part E required information relating to unfinished projects from the preceding period. The guidance required Scottish Water to complete a table showing agreed WIC18 projects that would incur expenditure after 31 March 2006.
- Taxation we asked for detailed information about the tax treatment of the investment programme and operating expenditure.

Opportunity for Scottish Water to clarify issues arising from the guidance

We recognise that our guidance required Scottish Water to provide a significant amount of information. However, we set out to collect only the minimum amount of information that we needed in order to establish the lowest reasonable overall cost to deliver the Ministers' objectives. In the main, the information we requested was consistent with that which Ofwat required from the companies for its price review. The main difference in the guidance we required reflected the fact that we need to establish both wholesale and retail charge caps. We also sought to remove any duplication in the guidance.

Scottish Water raised a number of issues in response to the guidance. In particular, it had concerns about providing the required project-level definition of the investment programme. We held a workshop for Scottish Water to clarify the guidance for the second draft business plan.

Scottish Water submitted its second draft business plan to this Office and to the Scottish Executive on 20 April 2005.

Key messages from Scottish Water's second draft business plan

In our view, the key points raised in Scottish Water's second draft business plan were as follows:

- Scottish Water believed that the Ministers' objectives should be re-phased, as delivering them within the 2006-10 regulatory control period would lead to unacceptable charge increases. They also suggested removing some outputs or increasing the level of borrowing available.
- Scottish Water calculated that the investment necessary to meet the Ministers' essential and desirable investment objectives was £3.1 billion. The essential objectives were costed at £2.9 billion (both at 2003-04 prices). Scottish Water assessed its revenue need on the basis of the essential investment alone.

- The plan stated that a charge increase of 88% in real terms between 2006 and 2010 would be required. It also stated that lower investment in 2010-14 would allow charges to fall substantially during that period.
- The investment programme in the second draft business plan differed from that contained in its first draft business plan. This reflected the Ministers' objectives for improving drinking water quality and environmental compliance.

In its second draft business plan, Scottish Water sought to justify a much higher level of operating and capital costs than would appear appropriate when compared with other water and waste water companies. Operating costs were forecast to increase by more than 30% in real terms.

Scottish Water also proposed to create a contingency fund by restricting the amount of available debt that it would borrow. This had a dual impact on charges. It directly increased the revenue required from customers. This in turn resulted in a higher tax charge, which further increased charges to customers. We believe that the interim determination process and the logging up/down process can capture variances in cost that are outside the control of management. If management cannot deliver the outputs required under the regulatory contract, it is for the Scottish Executive to take whichever steps it believes are necessary. The Ministerial Guidance makes it clear that customers should not be asked to pay twice.

The role of the Reporter

One of the Reporter's tasks is to review, audit and verify the information submitted in Scottish Water's draft business plans⁹².

In his review of the second draft business plan, we asked the Reporter to:

- review and clarify the material assumptions and policies that underpinned the information provided by Scottish Water;
- explain the scope and extent of the Reporter's challenge of Scottish Water's second draft business plan;

⁹² For a full explanation of the Reporter's role see Volume 2, Chapter 15 of our methodology consultation.

- report any significant differences of view;
- explain changes in the information submitted from that contained in previous returns; and
- provide an opinion on the accuracy and reliability of the information provided.

A key element of the Reporter's review is to scrutinise the capital investment programme proposed by Scottish Water. The Reporter audited a sample of the programme. He challenged the scope of requirements, the proposed solutions and the basis of cost estimates for the specific schemes.

The Reporter submitted his report to us in May 2005. In general, he raised concerns about the cost, scope and design of the investment programme. He also highlighted concerns about the approach that had been used and the proposal to commit large sums of money without proper analysis. The next chapter, which was written by the Reporter, provides an overview of his findings.

In response to concerns raised by the Reporter and our own analysis of the plan, we commissioned a more detailed review of the investment programme, including a greater number of site visits. This helped inform our draft determination.

Our response to the second draft business plan

In the timeline for this draft determination we planned:

- a workshop to clarify our understanding of the plan;
- an opportunity for the Scottish Water Board to present its second draft business plan; and
- publication by Scottish Water of a summary of its business plan.

Second draft business plan workshop

On 5 May 2005 we held a workshop to improve our understanding of Scottish Water's second draft

business plan. We were keen to discuss areas of Scottish Water's business plan where we felt additional information would be useful or that some clarification was required. This included the method of calculating current cost depreciation. This workshop also gave Scottish Water an opportunity to provide us with any further information that it felt could support its case.

Scottish Water Board presentation

The Board of Scottish Water presented its business plan to the Commissioner, his senior advisors and his directors on 12 May 2005.

Publication of the second draft business plan

We published Scottish Water's second draft business plan on 16 May 2005. We published our second open letter to the Scottish Ministers at the same time.

Summary

The second draft business plan was Scottish Water's primary opportunity to explain the resources it required to deliver the objectives set by the Scottish Ministers.

We provided Scottish Water with guidance on the format and content of the second draft business plan in December 2004. This was followed by a workshop to clarify our requirements. Scottish Water submitted its second draft business plan in April 2005.

In its second draft business plan, Scottish Water costed the delivery of the essential and desirable objectives of Scottish Ministers at £3.1 billion. It said that it would require a charge increase of some 88% in real terms to deliver only the essential objectives (costed at £2.9 billion). Scottish Water proposed a re-phasing of the objectives.

The Reporter identified a number of concerns with regard to the approach to the investment programme's design, scope and costings. An overview of the Reporter's findings, written by the Reporter, is provided in the next chapter.

Section 3: Business plans and guidance Chapter 16: The Reporter's views on Scottish Water's second draft business plan[®]

Introduction

The Reporter is an auditor who reviews the technical aspects of Scottish Water's business plan and reports his findings to this Office. In Chapter 13 the role of the Reporter is fully explained. Chapter 13 also summarises the Reporter's findings for the first draft business plan, which was submitted by Scottish Water in October 2004. This chapter briefly explains the Reporter's continuing role for the second draft business plan, together with his findings.

The Reporter's role for the second draft business plan

For the second draft business plan the Reporter continued to review Scottish Water's work as it was updated following submission of the first draft business plan and receipt of the Minister's statement. Scottish Water made many changes in all areas of its work; as a result the Reporter has continued his wide-ranging review. The Reporter's findings in relation to the second draft business plan are reported using the same headings that were used in Chapter 13.

The Reporter again spent the majority of his time reviewing Scottish Water's capital expenditure proposals. A relatively small amount of time was spent reviewing how Scottish Water calculated depreciation and how it had developed its demand projections. Time was also spent reviewing updates to Scottish Water's claims that special circumstances (or 'special factors') in Scotland resulted in it spending additional operating expenditure and capital maintenance expenditure compared with the water companies in England and Wales.

The Reporter's findings for the second draft business plan

Capital maintenance expenditure needed to maintain water infrastructure assets

Infrastructure assets comprise water mains and reservoirs that can have very long lives. For its second

draft business plan, Scottish Water continued to use the same optimising tool as described in Chapter 13. The Reporter's conclusions remained very much as for the first business plan; while the strategic nature of the optimising tool inevitably leads to some uncertainty the proposed replacement rate was reasonable and lower than in recent years. The Reporter considered that the level of investment was reasonable and should allow Scottish Water to maintain current levels of service.

Capital maintenance expenditure needed to maintain waste water infrastructure assets

Scottish Water calculated the cost of maintaining its sewers using the same model that had been used for water mains, but using relationships between age and blockages and collapses derived from its records. An initial assessment suggested that Scottish Water should focus its efforts on smaller diameter sewers, including sewer laterals. This outcome was very different to Scottish Water's current strategy and to common practice across the industry in recent years, which is based on the maintenance of large diameter sewers in sensitive areas such as town centres. Scottish Water reviewed the assessment to consider critical and non-critical sewers separately. The Reporter concluded that the revised strategy is a better balance of interventions on large and small sewers over the Quality and Standards III period. Scottish Water reviewed its proposals for work on sewer laterals to take account of the potential benefits of targeting high frequency defects and the risks of developing an intervention strategy in an area where there is little industry experience. The Reporter concluded that the programme of work on sewer laterals proposed for the Quality and Standards III period is reasonable. He also noted the need to monitor work on laterals carefully to build experience in this area and to provide the information necessary to develop effective intervention strategies.

Scottish Water assessed the maintenance costs for combined sewer overflows and other sewer structures on the basis of asset valuation and asset lives. Expenditure on reactive maintenance was included on the basis of historic expenditure.

⁹³ This chapter has been edited by our textual editor and a final version agreed with the Reporter. This office had no other involvement in the writing of the chapter.

The waste water infrastructure maintenance programme includes investment to alleviate property flooding due to overloaded sewers. It was concluded that the cost per property proposed by Scottish Water was reasonable. The asset maintenance investment addresses new problems which might emerge in future. Scottish Water does not have robust records which would allow the number of emerging problems to be projected with confidence. There is a risk that the number of emerging problems will be higher or lower than that projected in the business plan.

Capital maintenance expenditure needed to maintain water and waste water non-infrastructure assets

The Reporter's review of the first business plan identified a number of shortcomings in the methods used to estimate the expenditure needed to maintain water and waste water non-infrastructure assets. Following the Reporter's comments, and as part of its ongoing process, Scottish Water re-appraised its previous work. In particular, Scottish Water completely updated one part of its estimate using a revised asset inventory. The Reporter found that Scottish Water had significantly improved its estimates which included a much improved asset inventory. Despite the significant improvements, some deficiencies remained. These were still significant enough to cause some concerns about the reliability of the estimate. However, the Reporter noted that the proposed capital maintenance spend was below that indicated by a reasonable depreciation provision. This gave the Reporter some concern that there may be areas of expenditure that had not been adequately identified by Scottish Water.

Expenditure on management and general items

Management and general requirements comprise expenditure needed on vehicles, health and safety, property, information technology, telemetry (automatic transmission of operational information from assets located over a wide geographic area back to a central control room), scientific systems such as laboratories as well as the expenditure needed to obtain information

about Scottish Water's assets. In total the expenditure in these areas can be significant.

Scottish Water had developed its estimates reasonably thoroughly for its first draft business plan. Following his review of that submission, the Reporter concluded that in some areas the estimates were not supported by good quality records and therefore the estimates were subject to significant uncertainty in those areas. Because the records were not available, there was little that Scottish Water could do to improve its estimates for the second draft business plan. However, Scottish Water did employ an IT consultant to review and benchmark its IT estimates, review possible labour savings to justify extending its telemetry system and reconsider the planned operating life of its vehicle fleet.

These changes were reviewed by the Reporter who concluded the following:

- Significant uncertainty remained in some areas of the estimates.
- The benchmarking carried out by the IT consultant provided some reassurance that the IT costs were not unreasonable.
- Scottish Water's work to review the most economic vehicle fleet age was sound and it justified Scottish Water's decision to return to its current policy. However, the Reporter accepted that a longer average age of the fleet increased Scottish Water's compliance risk. The Reporter recommended that Scottish Water should improve its records and review the policy again at the next business plan.
- The economic justification for extending the telemetry system to Scottish Water's smaller facilities was finely balanced. However, the ability to have real time information would allow Scottish Water to improve the reliability of its service and to react more positively to emergencies.
- Scottish Water's programme for obtaining information on its assets was very extensive, with commensurately high costs. While of the opinion

that some economies might be possible in a number of areas, the Reporter noted that Scottish Water had some catching up to do when compared with the water companies in England and Wales. He also noted that the average spend between 1998 and the end of the Quality and Standards III period was less than the benchmark of 2% of turnover which some consider desirable for asset intensive companies.

Expenditure on quality improvements in the water distribution system

Scottish Water proposed to implement a number of projects to improve certain water quality parameters in some zones where the condition of its water mains was affecting water quality. Scottish Water proposed to renovate a proportion of the mains in those zones affected. Scottish Water had not carried out detailed studies to define the work needed. The Reporter concluded that the estimates were very uncertain.

In addition to the above projects, the Scottish Environment Protection Agency (SEPA) proposed to reduce Scottish Water's allowable water abstractions in some areas to meet the requirements of the Birds and Habitats Directive and Water Framework Directive of the European Union. For the second draft business plan Scottish Water reviewed its initial estimates. However, without undertaking detailed studies in each of the water resource zones affected the Reporter accepted that there was little further improvement that Scottish Water could make. The Reporter's previous opinion that the estimates were uncertain remained.

Expenditure on quality improvements in the sewerage system

Expenditure under this heading mainly relates to work needed to rectify a large number of unsatisfactory combined sewer overflows (CSOs) that spill waste water from the sewerage system in time of high rainfall and thereby cause environmental damage. The technical solution where quality is affected generally comprises the provision of storage at the CSO to capture the overflows and return them to the sewers after the storm, together with the provision of some 'compensation'

storage at sewage treatment works. The calculation of storage requires a computer 'hydraulic model' to be constructed. This is usually undertaken during detail design. Therefore for the high-level estimates in the business plan Scottish Water developed an 'algorithm' relating storage volume to population in the catchment.

After reviewing estimates in the second draft business plan, the Reporter continued to have a number of concerns resulting from the review which, in total, indicated that the overall cost estimate might be high. Key concerns were that:

- the estimated cost of screened overflows has not been benchmarked with experience from the Quality and Standards II programme;
- there is some duplication of work included in the programme;
- pipework costs have been over-estimated; and
- each CSO has been considered individually, without assessing potential savings which might be realised by integrating solutions.

Scottish Water has based some estimates of storage volumes in Quality and Standards III on a storage algorithm developed from another programme of work. The Reporter remained particularly concerned about the use of the algorithm for 'agglomerated' storage for discharges to shellfish water and bathing waters, which generate a significant part of the estimated expenditure in the Quality and Standards IIIa94 period. A better estimate of the cost in the relevant catchments can only be produced when detailed modelling of the interaction of the sewerage system and the receiving water has been completed. In the absence of this work, the Reporter was not convinced that an optimum solution could be delivered efficiently within the Quality and Standards IIIa period. The Reporter concluded that there was a strong case for deferring investment in these catchments until a more robust solution and estimate has been developed.

Expenditure on quality improvements at water and sewage treatment works

The quality programme for water treatment works comprises a significant part of Scottish Water's capital programme. Because of the numbers of water treatment works involved in the programme, Scottish Water applied standardised solutions to common problems. Following his review of the first draft business plan the Reporter concluded that the cost for the programme significantly overestimated the actual likely cost.

Following this conclusion Scottish Water undertook a series of reviews and adjusted its estimates. These were again reviewed by the Reporter. The Reporter concluded that Scottish Water had improved its estimates, meeting a number of his concerns. However, he also concluded that the standardised solutions which continued to provide the basis of the revised estimates still did not take into account site-specific factors. While considering that the new estimates were not so extreme, the Reporter considered that they still overestimated the true cost of the programme.

The waste water quality programme is based on indicative new standards provided by SEPA for the Quality and Standards III period. Scottish Water prepared estimates for each new consent using standardised solutions which reflect current practice. The Reporter concluded that the estimates for the Quality and Standards IIIa period were reasonable, although he had some minor concerns about the estimates for small treatment works. The Reporter concluded that some of the estimates for work at large treatment works in the Quality and Standards IIIb period had been over-scoped, resulting in them being over-estimated.

A significant part of the waste water quality programme relates to the expenditure needed to treat additional sludge, mainly arising from the need to add ferric salts to the main process units. Most of this expenditure occurs in the Quality and Standards IIIb period. Scottish Water has not prepared a sludge strategy which would demonstrate that the investment included in the

business plan provides an optimum solution based on cost, environmental impact and sustainability. The Reporter remained concerned by some of the cost estimates and the economic justification for the solutions costed for the business plan. Because the expenditure does not occur until Quality and Standards IIIb there is an opportunity for Scottish Water to develop both its sludge strategy and its cost estimates.

The additional process units required to meet the quality programme at both the water and sewage treatment plants result in additional operating costs. Following his review, the Reporter concluded that while a comparison with Scottish Water's existing costs indicated that the estimates might be slightly high, they were probably not unreasonable.

Expenditure to maintain the supply demand balance

For the first draft business plan Scottish Water included two programmes of work under this heading:

- A programme of work to remove a lack of capacity in some of Scottish Water's assets in order to allow new household and commercial development to proceed.
- A programme of work in some resource zones (geographic areas which are supplied by a number of resources linked such that the risk of supply failure to all customers in the zone is similar) to meet an agreed minimum standard of resource availability in drought years.

Following Ministerial Guidance, the second programme was dropped, although some limited work remained within the quality programme. The Reporter's views have already been given on this item in the section above, entitled 'Expenditure on quality improvements in the water distribution system'.

The Reporter reviewed the expenditure that was estimated to be needed to remove development constraints for the first draft business plan. As a result of this work the Reporter concluded that the assumptions

that had been made meant that the resulting estimates were very uncertain. The review also concluded that the uncertainty was such that a reasonable estimate would probably only become possible when the programme had been running for some time.

In February 2005 the Minister gave additional guidance that the household contribution of more potential commercial developments should be removed than had initially been allowed for by Scottish Water. He also stated that Scottish Water should make a contribution towards additional costs arising from increasing the capacity in the distribution system. Scottish Water also noted that it might have to develop some additional water resources for developments in some water resource zones where security of supply was limited. Although these items were added to the final estimate, Scottish Water maintained its basic methodology. The Reporter noted that some very small developments could generate quite large sums of money, when in reality they would probably be accommodated within the existing water or waste water treatment works. Scottish Water reacted positively to this comment and did not cost for very small developments. Given that the methodology had not changed, the Reporter maintained his opinion that the estimates remained very uncertain.

Expenditure on enhanced levels of service

Following the first draft business plan the Minister required Scottish Water to cost the possibility of increasing the level of service relating to customer interruptions in those areas of the country when such interruptions were greater than normal. Scottish Water undertook this work using the same optimisation model that had been used to estimate its needs to maintain its existing levels of service (see the section above, 'Capital maintenance expenditure needed to maintain water infrastructure assets').

Given that the same method had been used, the Reporter again considered that the level of investment was reasonable to meet the assumptions made by Scottish Water. Any investment up to the amount suggested would cause some improvement to levels of service.

Depreciation

For the second draft business plan the Reporter was asked to review the asset lives used by Scottish Water to estimate its depreciation provision for its existing assets. The Reporter noted that the same lives had been used and that they were similar to industry norms. He suggested that as more information on its assets was collected by Scottish Water, Scottish Water should review its asset lives to ensure that they matched engineering reality.

Demand projections

Demand projections are needed to test the capacity of Scottish Water's assets over the period of the business plan and also for revenue projections. The demand projections were reviewed by the Reporter who noted that the population projections were based on the recent census and government projections and so should be robust. He noted that Scottish Water had assumed that per capita household consumption was assumed to stay constant. Because Scottish Water did not maintain a household consumption monitor it was difficult for Scottish Water to estimate trends in per capita growth in Scotland. He noted that consumption had been rising slowly in England and Wales but that seasonal effects could have significant impacts in dry years. He also noted that non-household consumption was projected to fall over the business plan period. This fall was predominately from a number of large users. This aspect of the projection was the most uncertain.

The Reporter recommended that Scottish Water should set up a domestic consumption monitor to ensure that future projections were soundly based.

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The Strategic Review of Charges 2006-10: The draft determination

Financing delivery of the investment objectives of the Scottish Ministers



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Executive summary

Introduction

The capital programme is Scottish Water's largest single element of expenditure. In recent years, annual capital investment in Scotland has ranged from £350 million to £520 million¹.

This volume sets out the capital programme that is required to meet the 'essential' and 'desirable' objectives of the Scottish Ministers. It explains how we have reviewed this capital programme to ensure that it is delivered and financed at the lowest reasonable overall cost. Meeting the Ministerial objectives will require Scottish Water to deliver a larger capital programme (in terms of its cost) than has ever been delivered by companies of a similar size south of the border in any single four-year period.

It is an important principle that customers should pay for the level of service they receive. We have taken steps at this Strategic Review to ensure that the way in which capital expenditure is funded is more transparent. In this volume we set out clearly our assessment of the funding required to finance the capital programme and explain fully how we have reached our conclusions.

Background

It is necessary to invest in water and waste water assets for the following reasons:

- To maintain the level of service to customers this
 investment is often termed capital maintenance. The
 assets of any business need to be replaced at the end
 of their useful lives if the business is to continue.
- To improve the quality of service to customers and the public – this investment is often termed capital enhancement, or quality investment. Investment in assets is necessary to meet higher environmental and quality standards.
- To respond to customers' changing demand patterns – this investment is often termed capital enhancement, or growth investment. The capacity of

the assets may need to be increased to meet both the demands of new customers and growth in usage from existing customers.

The investment programme will benefit customers, both now and in the future. However, we believe that each generation of customers should pay the full cost of the water and sewerage services it consumes.

Any business could, at least in theory, borrow in order to cover any or all of its costs. However, any borrowings will need to be repaid, with interest, from future revenues. In other words, continuing to borrow to cover current costs will mean that revenues have to increase to meet the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditure faced by the water industry, borrowing is only delaying and worsening the charge levels that future generations face. Unless revenues are brought broadly into line with the average continuing annual obligations of the water industry, there will be a continuing need to increase borrowing in order to balance the books at the end of the financial year.

The Ministerial Guidance², that we received in February 2005, recognised the importance of maintaining and, where possible, improving the financial strength of Scottish Water. By moving towards a regulatory capital value (RCV) approach to charge setting, we ensure that there will be a transparent and sustainable level of borrowing and that both current and future customers will be treated fairly.

Quality and Standards II

The Scottish Ministers establish investment priorities for the Scottish water industry through the Quality and Standards process. This process brings together a range of stakeholders to define the level and scope of investment in the water industry. Quality and Standards specifies the level of service to customers, and the environmental and water quality standards that the water industry in Scotland must deliver.

¹ This excludes investment delivered through PPP schemes.

See Appendices 4 and 15.

Quality and Standards II set investment priorities for the period from April 2002 to March 2006. The investment programme was summarised in 'Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-2006', which was published in August 2001. This indicated that the cost of the investment programme would be £2.34 billion (2000-01 prices).

In the Strategic Review of Charges 2002-06, we examined the scope for capital efficiency in the Quality and Standards II investment programme. We advised Ministers that efficiency savings of around £500 million were possible. Our analysis showed that Scottish Water should be able to deliver all of the required outputs for £1.81 billion. Ministers accepted this advice.

In the Strategic Review of Charges 2002-06, we forecast a rate of capital expenditure inflation (COPI)³ of 1.5% a year. COPI has consistently continued at a higher level than we had expected and this is likely to increase the efficient cost of delivering Quality and Standards II to approximately £1.93 billion. Scottish Water is therefore required to deliver the Quality and Standards II outputs for this revised amount.

In our monitoring of the delivery of Quality and Standards II, we were concerned to verify £114 million of efficiencies that the former East of Scotland Water Authority had claimed in its development of Quality and Standards II. If the claimed efficiencies were not substantiated, customers faced higher bills because the efficiency target applied to the East of Scotland Water Authority was less challenging than it would otherwise have been⁴. It became apparent that no definitive list of projects existed to substantiate East of Scotland Water Authority's efficiency claim.

We reached an agreement with Scottish Water about the efficiency claim in early 2003. Scottish Water's Board agreed that the £114 million (which equated to £80.2 million post-efficiency), should be amortised in five equal instalments of £16.04 million during the period from 2006-07 to 2010-11. We have included this agreed adjustment in the capital efficiency target in this draft determination.

Scottish Water was also tasked with delivering additional outputs that were not known when the original investment programme was established. These included:

- · additional security measures;
- unbudgeted development contributions; and
- measures necessary to comply with the Dangerous Substances and Explosive Atmospheres Regulations 2002.

Scottish Water estimated that the total cost of these additional outputs is £110 million. This increased the size of the Quality and Standards II investment programme to approximately £2.04 billion⁵.

Delivery of Quality and Standards II

Analysis of the investment programmes that have been delivered by the companies in England and Wales demonstrates the challenge posed in delivering the Quality and Standards II programme.

We examined the capital investment delivered, and forecast, by all of the water and sewerage companies over the 12 consecutive four-year periods from privatisation in 1989 until 2005. We have adjusted the value of each programme to a 2003-04 price base.

A comparison of the largest ever four-year programme for each of the English and Welsh companies and Quality and Standards II⁶, shows that only three companies have achieved a larger four-year investment programme.

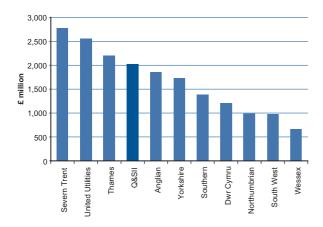
³ COPI – Construction Output Price Index.

The overall efficiency applied to East of Scotland Water Authority was 11%, compared with 26% for North of Scotland Water Authority and 27% for West of Scotland Water Authority. See 'Strategic Review of Charges 2002-06', Table 19.12, Page 207.

⁵ In outturn prices.

^{6 £2,026} million in 2003-04 prices, including an estimate for capital inflation and Scottish Water's claim for new outputs.

Figure 1: Largest four-year investment total for each company (1990-2005) (2003-04 prices)



Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger, while Anglian Water and Yorkshire Water are similar in size to Scottish Water. Table 1 shows key statistics for these companies and for Scottish Water.

Table 1: Key company statistics⁷

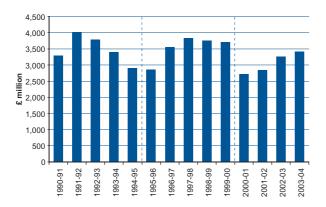
Company	pany WATER				SEWE	RAGE		
	Connected properties (millions)	Population (millions)	Length of mains (km)	Number of treatment works	Connected properties (millions)	Population (millions)	Length of sewers (km)	Number of treatment works
Thames	3.49	8.26	31,416	97	5.38	13.06	67,335	349
Severn Trent	3.30	7.31	45,949	172	3.71	8.87	54,040	1,017
United Utilities	3.13	6.69	40,741	140	3.07	6.66	40,018	599
Scottish Water	2.48	5.18	46,508	371	2.37	4.69	44,854	1,836
Yorkshire	2.12	4.66	31,217	81	2.12	4.65	30,157	614
Anglian	1.93	4.18	36,762	143	2.47	5.70	35,394	1,077

Anglian Water and Yorkshire Water, the two companies of similar size to Scottish Water, have never delivered a fouryear programme as large as Quality and Standards II.

In England and Wales, regulatory control periods last five years. Companies use the first part of a regulatory control period to decide how best to deliver the agreed capital programme. An analysis of total investment since 1990 shows the effect of the regulatory control period on the delivery of investment. This is illustrated in Figure 2.

Information for 2003-04 is taken from the Ofwat June Return for the companies in England and Wales and from the WIC Annual Return for Scottish Water.

Figure 2: Total capital investment of the water and sewerage companies 1990-91 to 2003-04 (in 2003-04 prices, adjusted for inflation)



This analysis shows that the level of investment in the first year of each regulatory control period (1990-91, 1995-96 and 2000-01) is generally lower than in subsequent years of the period. The shorter four-year regulatory control period in Scotland therefore further increased the challenge in delivering Quality and Standards II.

Quality and Standards III

Quality and Standards III covers the period 2006-14. Detailed work in defining the required investment was completed by a number of specialist stakeholder groups, each of which had particular responsibility for a specific work package. These work packages included:

- maintenance;
- growth in the water and sewerage networks;
- environmental improvements;
- · drinking water quality; and
- other important issues for customers.

Each work package identified investment 'drivers'. In most cases, the driver of a need for investment was legislation. A number of scenarios were then drawn up, ranging from 'do nothing' to 'aspirational' improvement. Scottish Water was then asked to cost the gap between the expected position at the end of Quality and Standards II and each of the identified scenarios. The specialist groups responsible for work packages produced interim reports, which were used by the Scottish Executive to inform the Quality and Standards III consultation process. It is important to highlight that only Scottish Water was involved in costing the required outputs.

Scottish Water's first draft business plan

Scottish Water submitted its first draft business plan to this Office on 29 October 2004. The plan contained its initial investment proposals. We had expected the proposals to take account of the likely investment priorities emerging from the Quality and Standards III process, Scottish Water's assumptions on any likely overhang from Quality and Standards II, and its views on the size of investment programme that could be managed efficiently.

Scottish Water provided details of its proposed investment programme in an appendix to the draft business plan, Table C⁸. This listed 790 projects that were planned to be completed over the Quality and Standards III period. These projects had a total value of £4,891 million⁹. Scottish Water proposed to invest £2,199 million of this during the 2006-10 regulatory control period¹⁰. This equates to £550 million of investment each year and represents around £226 a year for every connected property in Scotland.

This proposed investment programme would have represented a significant delivery challenge. Figure 3 shows the level of investment¹¹ that has been delivered each year since 1996-97.

The first draft business plan, including Table C, was completed using 2005-06 prices. The second draft business plan was completed using 2003-04 prices. In order to ensure comparability throughout this chapter, we have unwound Scottish Water's inflation adjustment in the first draft business plan, and reported all investment in 2003-04 prices unless otherwise stated.

Of the 790 projects listed in Table C, six had a negative value recorded against them. If these negative values were not taken into account, then the actual cost of the proposed investment programme would be £5,412 million in 2003-04 prices.

In the main body of the business plan, Scottish Water actually proposed to invest £2,211 million, the equivalent of £553 million for each year of the 2006-10 period, or £229 per property a year (in 2005-06 prices). This figure does not appear to be consistent with those reported in Table C. We have relied on Table C for the analysis in this section.

¹ This is the total cash cost of investment rebased to 2003-04 prices, we have not adjusted values to take account of the relative efficiency of the Scottish water industry in each year.

Figure 3: Total investment by the Scottish water industry per year (2003-04 prices)

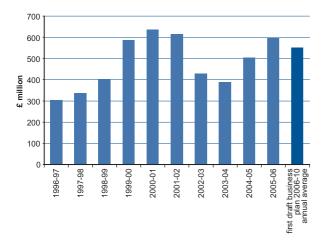
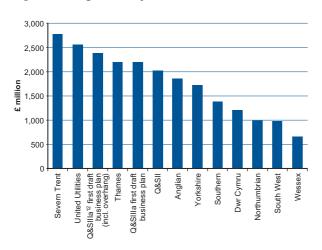


Figure 4 shows that the first draft business plan proposed an investment programme for the 2006-10 regulatory control period that was comparable to the biggest programme so far delivered by Thames Water.

Figure 4: Largest four-year investment total



Moreover, Table C did not include the expected £183 million¹³ overhang from Quality and Standards II. Scottish Water therefore proposed to deliver a £2.38 billion investment programme over four years.

Scottish Water's proposed investment programme was, therefore, almost without precedent in the recent history

of the water and sewerage industry in the UK. Table 2 shows that the largest five privatised water and sewerage companies¹⁴ have delivered programmes of more than £2.4 billion on only four occasions.

Table 2: Delivery of four-year investment programmes of more than £1.1 billion by the largest five companies (1990-2005)¹⁵

Size	Per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	3.3%
Over £2.5 billion	£625m	3	5.0%
Over £2.4 billion	£600m	4	6.7%
Over £2.3 billion	£575m	7	11.7%
Over £2.2 billion	£550m	12	20.0%
Over £2.1 billion	£525m	20	33.3%
Over £2.0 billion	£500m	24	40.0%
Over £1.9 billion	£475m	32	53.3%
Over £1.8 billion	£450m	35	58.3%
Over £1.7 billion	£425m	37	61.7%
Over £1.6 billion	£400m	41	68.3%
Over £1.5 billion	£375m	47	78.3%
Over £1.4 billion	£350m	50	83.3%
Over £1.3 billion	£325m	52	86.7%
Over £1.2 billion	£300m	56	93.3%
Over £1.1 billion	£275m	60	100%

Scottish Water's first draft business plan also contained a number of projects that did not appear to be consistent with likely Quality and Standards III priorities which have subsequently been confirmed in February's Ministerial Guidance. They were referred to in the business plan as 'investment in other service areas'. These projects accounted for around £195 million of investment.

The Reporter audited Scottish Water's first draft business plan. We were concerned by his comments about both the cost and the scope of projects in the investment programme.

In an open letter¹⁶ to Scottish Ministers in December 2004, we noted that Scottish Water should be set challenging but achievable objectives. In this regard, we emphasised the importance of defining a capital programme of a size that could be delivered efficiently.

¹² Q&S IIIa: Quality and Standards III investment required in the period 2006-10.

Scottish Water reported a Quality and Standards II overhang of £194 million at 2005-06 prices. This figure includes Quality and Standards II investment to be delivered after March 2006 (£154 million) and new obligations to be delivered after March 2006 (£40 million).

Described in Table 1

The number of occasions is cumulative. That is to say there were two occasions when a programme of more than £2.6 billion was delivered and one occasion when a programme of £2.5 billion to £2.6 billion was delivered. Accordingly, there were three occasions when a programme of more than £2.5 billion was delivered.

This letter can be found on our website – www.watercommissioner.co.uk

The letter also noted that Quality and Standards II was itself a substantial investment programme and it seemed increasingly likely that a large proportion of that programme would not be delivered during the current regulatory control period. This limited the opportunity for Quality and Standards III outputs to be delivered in the 2006-10 regulatory control period.

The Ministerial Guidance¹⁷ issued in February this year marked the completion of the Quality and Standards III process. It set out the objectives of the investment programme for Quality and Standards III. It also set out the detailed objectives for the period of the Strategic Review of Charges 2006-10.

The investment objectives in the Ministerial Guidance were divided into those that are 'essential' and those that are 'desirable'. Ministers required the Strategic Review of Charges 2006-10 to fund Scottish Water to deliver all of the essential objectives. These outputs were to be delivered irrespective of their impact on customers' bills.

Ministers also set out desirable objectives that we were required to fund provided that:

- it was reasonable to expect that they could be delivered efficiently; and
- projected charges to customers in the period to 2010 did not rise by more than the level of inflation.

Scottish Water's second draft business plan (April 2005)

In its second draft business plan, Scottish Water set out its investment plan for the period 2006-10. It provided details of the costs involved in delivering the investment objectives set out in the Ministerial Guidance.

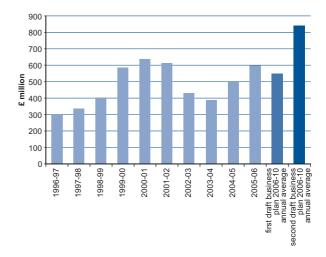
The second draft business plan suggested that the cost of delivering even the essential objectives set out in the Ministerial Guidance would lead to a significant increase in charges. Scottish Water put forward three alternative solutions to keep charges stable:

- a re-phasing of the investment objectives, with less being undertaken in 2006-10 and more in 2010-14;
- increasing the borrowing limits permitted to Scottish Water; or
- reducing the scope of the objectives.

Scottish Water stated that it would need to invest $\pounds 3.37$ billion to meet the Ministers' essential and desirable objectives over the same period. Some $\pounds 2.92$ billion would be required to meet the Ministers' essential objectives.

Our analysis of Scottish Water's proposed investment programme confirmed that not even the essential objectives could be delivered effectively during the 2006-10 regulatory control period unless there were significant reductions in cost available either because of efficiency or because the investment programme had been overscoped. Figure 5 compares the total investment per year suggested by the first and second draft business plans with historic and actual spending.

Figure 5: Total investment per year – comparison of actual performance with first and second draft business plans (2003-04 prices)



We have, however, been able to identify significant cost reductions in the programme.

¹⁷ We discussed the Ministerial Guidance in more detail in Volume 4, Chapter 14.

Transition from Quality and Standards II to Quality and Standards III

Managing overhang from one regulatory control period to the next is difficult if:

- a large proportion of the programme (either in terms of money or the number of projects) is still to be delivered at the end of the period; and/or
- resources that were made available to deliver the capital programme have been spent inefficiently.

It now appears very likely that the Quality and Standards II investment programme will not have been delivered in full by April 2006. In its second draft business plan, Scottish Water estimated the overhang at £283 million.

We initially estimated that the size of the Quality and Standards II overhang that should be funded by customers was in the range of £140 million to £180 million¹⁸. This range was based on deducting the actual amount invested over the 2002-06 period from the total budget for Quality and Standards II. We adjusted the total budget for Quality and Standards II to take account of the unexpected effect of capital inflation in the period 2002-06. We asked Scottish Water to make any representations on this assessment by 20 May 2005.

We were not fully persuaded by Scottish Water's explanation of the need for £283 million to deliver the remainder of Quality and Standards II. Our analysis of Scottish Water's claimed allowance indicated that the £283 million included an allowance for likely inflation beyond the end of the current regulatory control period. It also seemed to include an allowance to cover inefficient delivery in the early years of Quality and Standards II. We made two adjustments to the claimed £283 million overhang.

First, we removed the effect of inflation after 31 March 2006. This ensures that customers do not fund the additional costs associated with late delivery. This reduced the overhang to £274.5 million (at 2005-06 prices).

Second, we restated the £274.5 million to 2003-04 prices to ensure that it was presented on a consistent basis with the remainder of the capital expenditure funded in this draft determination. This reduced the £274.5 million to £253.0 million.

From this claim we subtracted £54.9 million at 2003-04 prices to reflect the agreement we had reached with Scottish Water concerning the former East of Scotland Water Authority's claimed efficiencies. This produced an allowed overhang for Quality and Standards II of £198.1 million.

Reviewing the capital programme

Scottish Water's investment plan has been scrutinised in detail by the Reporter, the quality regulators¹⁹ and this Office. The Reporter raised a number of concerns about the scope and composition of the proposed investment programme. We therefore asked two firms of engineering consultants and Ofwat to help us carry out a more detailed review of the capital programme than we had originally planned.

Figure 6 sets out the process we undertook in carrying out our analysis.

¹⁸ Letter from the Commissioner to the Chief Executive of Scottish Water, 2 May 2005.

¹⁹ The Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA).

Figure 6: Framework for assessing capital investment requirements

Ministerial Guidance on the size of the overall investment programme and the outputs required to be delivered Establish investment Scottish Water Investment Plan submission with initial costs, project by project, and detailed information on outputs programme Establish impact of Quality and Standards II overhang and build into baseline investment programme Reporter & regulator challenge: audit of scope of project SEPA and DWQR scrutiny: ensure that required outputs are Review in the investment baseline programme Further challenge and scrutiny by two consultant engineering firms and by Ofwat establish a baseline Capital maintenance Capital enhancement baseline investment baseline investment programme Ofwat capital maintenance Ofwat cost base Assess econometrics and cost base plus allowances for efficiency additional capital maintenance to ensure continuing serviceability Ofwat targets for capital Ofwat targets for capital enhancement and scope for maintenance and scope for out-performance by out-performance by companies companies Assess scope to Assess degree to which Assess degree to which scope for improvement is scope for improvement is limited by size of investment limited by size of investment programme Determine the required level of capital expenditure and the Target expenditure maximum 'desirable' outputs that can be delivered in accordance with Ministerial Guidance and within an overall level of investment spend that is consistent with efficient delivery

Scope for capital efficiency

In determining the scope for efficiency in the delivery of capital maintenance, we have broadly followed the approach that is adopted by Ofwat for the companies in England and Wales. We have adjusted our approach to take account of the situation in Scotland. Our methodology included the following stages:

- An assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment was carried out using Ofwat's capital maintenance econometric models.
- An adjustment to the required level of capital maintenance expenditure to take account of any

circumstances specific to Scotland that could affect Scotlish Water's costs.

 An assessment of the scope for efficiency. We used Ofwat's cost base approach to determine the scope for efficiency and have drawn on the evidence gathered by Ofwat on the scope for continuing improvement.

We are confident that our approach is robust. To verify our results, we carried out a series of high-level comparisons between our assessment for Scottish Water and the levels of capital maintenance spend in England and Wales. In these comparisons we took account of:

- the value of the asset base,
- the condition of the asset base, and
- the number and type of assets.

We used Ofwat's cost base approach to benchmark Scottish Water's efficiency in delivering capital enhancement projects. We took account of special factors relating to the industry in Scotland.

We recognise that this analysis is particularly specialised. We therefore commissioned independent consultants, Faber Maunsell, to carry out the analysis of relative efficiency. The results of their work were reviewed by SMC (Strategic Management Consultants) and by Ofwat to ensure that our approach was consistent with that which is used south of the border.

We assessed the scope for efficiency for both capital maintenance and capital enhancement at a programme level. We did not seek to review the relative efficiency of individual projects. The project costs contained in the baseline programme are therefore the pre-efficiency costs. It will be for Scottish Water to determine how these same projects will, at a programme level, be delivered within the overall post-efficiency budget.

Faber Maunsell reviewed the standard costs submitted by Scottish Water to ensure that they were consistent with Scottish Water's investment programme and Ofwat's benchmark costs. When Faber Maunsell were satisfied with the cost information, we assessed the procurement efficiency gap for the capital investment programme contained in the second draft business plan expressed as a percentage of total investment and separated by water and sewerage, infrastructure and non-infrastructure. The capital efficiency factors that resulted from this analysis are shown in Table 3.

Table 3: Capital efficiency factors applied to the quality, growth and customer service investment for the highest estimated cost investment programme

	Cost base efficiency gap	Reduction required to close 75% of gap	Additional reduction required to match 'continuing improvement' by water companies ²⁰	Total reduction required	
Water					
Infrastructure	23.5%	17.6%	3.7%	20.7%	
Non-infrastructure	25.7%	19.3%	3.7%	22.3%	
Weighted average	25.6%	19.2%	3.7%	22.2%	
Sewerage		1			
Infrastructure	17.2%	12.9%	4.4%	16.7%	
Non-infrastructure	29.8%	22.4%	4.4%	25.8%	
Weighted average	22.4%	16.8%	4.4%	20.5%	
Combined					
Infrastructure	17.9%	13.4%	4.3%	17.2%	
Non-infrastructure	26.9%	20.0%	3.9%	23.1%	
Weighted average	24.2%	18.2%	4.0%	21.4%	

In line with the approach of the Competition Commission²¹ when determining price caps for Sutton and East Surrey Water and Mid Kent Water, we have phased the efficiency challenge for Scottish Water over the first three years of the regulatory control period.

The lowest estimated scope for efficiency improvement averaged over the entire phased investment programme is 15.4%. The highest realistic efficiency gap calculated over the entire programme is 20.8%.

PPP contracts

Public Private Partnerships (PPP) play an important role in delivering waste water services to customers in Scotland. There are nine PPP contracts. Some 50% of Scotland's total waste water and 80% of Scotlish Water's sludge is processed through PPP contracts.

The nine projects are outlined in Table 4. This also shows the projected fee payable to each consortium.

Table 4: PPP contracts with Scottish Water

Project name: Company name	Contract signed	Duration years	Construction costs (£m)	Annual fee in 2003-04
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£21m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£9m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£7m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£19m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£11m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£14m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m ²²

^{20 &#}x27;Continuing improvement' reflects the minimum improvement that Ofwat expects the frontier company to make during the regulatory control period.

²¹ Reports on references under sections 12 and 14 of the Water Industry Act 1991, 2000. See for example, paragraph 6.148 of the report on Sutton and East Surrey Water.

²² Totals do not add due to rounding.

At the last Strategic Review of Charges our analysis showed that PPP offered a more efficient option than traditional procurement and operation of the same treatment works by the three authorities. We also noted that the cost of providing the required new treatment works using the PPP route was £550 million. The authorities estimated that the cost of these works would have been £700 million using traditional procurement. The three authorities also incurred operating and capital maintenance costs that were some 40-65% higher than the average south of the border.

At the current time, the PPP contractors appear to be earning a relatively high return on their investment. In 2003-04, Scottish Water paid the PPP contractors approximately £112 million. We used Ofwat's capital maintenance and operating cost econometric models to review the likely capital maintenance and operating costs. The models suggest that capital maintenance costs at average efficiency would amount to around £20 million.

The Ofwat operating cost models suggest that operating costs at average efficiency would amount to approximately £35 million²³.

The remaining £57 million of the annual charge could be attributed to financing costs.

If 90% of the initial capital costs were funded through debt and 10% through equity, then we estimate that the annual interest and principal repayment costs would be approximately £43 million²⁴. This would leave £13 million as a return for the equity invested in the project by the PPP contractors. This would imply an equity return of below 20%²⁵.

To an extent this equity return can be justified by the risk that the PPP contractors took in agreeing to build the treatment works for a much lower cost than the three authorities. The risks that the contractors absorbed include:

- meeting required standards;
- cost overruns during construction if a project or site is not delivered on time or to budget, the contractor incurs the associated costs;
- timely completion the contractor is paid only when the assets are fully operational.

PPP contracts are complex and typically operate over an extended period. If there is significant initial capital expenditure the risk to the contractor is likely to be greater in the early part of the contract. The cost of borrowing will reflect this extra risk.

Although all of the PPP contracts are now operational, we are not aware of any attempt to refinance these contracts. We would hope that it may be possible for customers to share the benefits of a possible refinancing of the projects since construction risks have been managed and the cost of capital also appears to be lower than it was when these contracts were originally let

In its second draft business plan, Scottish Water identified a total investment requirement of some £66 million (2003-04 prices) at three PPP waste water treatment sites. This investment appears to relate to odour and unsatisfactory discharges.

The total operating costs associated with this investment were £1.4 million (2003-04 prices) a year.

We have reviewed the proposed new investment at the PPP sites and have reduced this investment to reflect the opportunity for efficiency. We have also reduced the scope of what is required to reflect the advice that we have had from the Reporter and our more detailed review of the capital programme.

We have calculated an appropriate annual PPP operating cost. This is set out in Table 5.

²³ This figure comprises all operating costs, including charges paid to SEPA and local authority rates, where appropriate.

²⁴ This is based on a fixed annual percentage interest rate of 7.5%, with 27 equal payments made at the end of each year of the concession. The initial capital cost is assumed to be £550 million.

This is the internal rate of return on the assumption that the interest charges are fixed and the operating costs and capital maintenance costs are at average efficiency. We have assumed that the equity and debt were committed two years before the treatment works were fully operational. We have also assumed that Scottish Water made a payment equal to the PPP contractors' interest and principal repayment cost in the year before full operation.

Table 5: Allowed for additional PPP costs 2006-10

	2006-07	2007-08	2008-09	2009-10
Additional PPP costs ²⁶	£1.0m	£1.0m	£3.2m	£7.0m

Setting the allowed level of capital maintenance

Ofwat uses econometric modelling in its assessment of the relative efficiency of the capital maintenance expenditure of the water and sewerage companies in England and Wales. This method uses statistical analysis to establish relationships between the capital maintenance expenditure made by companies and a number of factors that might drive costs which are common to all companies. Once the relationships have been established, the models can be used to predict the appropriate level of expenditure for each company. This predicted expenditure can then be compared directly with the companies' actual expenditure. Information to allow this comparison is collected from each company in a systematic manner.

The capital maintenance econometric models that are used by Ofwat were first used for its 1999 price review and were published in April 1998²⁷. In 2003, Ofwat conducted a detailed review of the models, in consultation with industry representatives, in preparation for its 2004 price review. In the review, Ofwat worked with professor Mark Stewart from the University of Warwick, who provided an independent verification of the models. Ofwat published the final form of the capital maintenance econometric models for the 2004 price review in January 2005²⁸.

Each of the nine capital maintenance models includes a relationship between the capital maintenance expenditure reported by the companies and the factors that might drive costs. These factors must have a clear impact on costs but should also be as far outside the control of the management of the company as possible.

The factors that might drive costs that are used within the econometric models are known as explanatory factors. The models themselves take different forms. These are summarised in Table 6.

Table 6: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Unit cost	Total connected properties
Water distribution infrastructure	Log linear	Length of main; total connected properties
Water distribution non-infrastructure	Log linear	Pumping station capacity; water service reservoir and water tower storage capacity
Water management and general	Log linear	Billed properties; proportion of billed properties that are non-household
Sewerage infrastructure	Log linear	Length of sewer; number of combined sewer overflows; proportion of critical sewers
Sewerage non-infrastructure	Unit cost	Number of pumping stations
Sewage treatment	Log linear	Total load; total number of works
Sludge treatment and disposal	Unit cost	Total weight of dry solids
Sewerage management and general	Unit cost	Billed properties

In assessing Scottish Water's capital maintenance requirements in 2006-10 we broadly followed the four-stage process that Ofwat used in its 2004 price review²⁹:

 Stage A Maintaining serviceability to customers to date.

We have made an assessment of the level of expenditure required to maintain current serviceability of Scottish Water's assets. In the approach used by Ofwat, this stage takes into account evidence of historic levels of capital maintenance expenditure, current serviceability and asset performance information. For our assessment of Scottish Water's proposals, we have not been able to rely on information on historic expenditure, serviceability measures or asset performance. This is because the information available is not adequately robust to use in the manner that Ofwat's approach demands. We have therefore used an alternative approach based on the capital maintenance econometric models developed by Ofwat. We have used these models to derive the future expenditure we consider is appropriate at Stage A.

²⁶ Based on outturn prices, assumes enhancement investment is fully operational in Quarter 4 of 2008-09.

²⁷ 'Assessing the scope for future improvements in water company efficiency: a technical paper', Ofwat, 30 April 1998.

Water and sewerage service unit costs and relative efficiency 2003-04 report', Ofwat, January 2005.

Ofwat's approach is described in the publications 'Maintaining water and sewerage systems in England and Wales: Our proposed approach for the 2004 periodic review' (May 2002) and 'Setting the price limits for 2005-10: Framework and approach – a consultation paper' (October 2002).

• Stage B Is the future period different?

This stage examines the forward-looking element of capital maintenance expenditure. In essence this step considers how much more (or less) capital maintenance expenditure (compared with the Stage A assumptions) should be required in the future due to changes (in for instance the rate of deterioration of assets, or changes in other risks due to service failure) that have occurred, are occurring or are likely to occur. In the December 2004 determination, Ofwat used an assessment based on the principles set out in the UK Water Industry Research (UKWIR) common framework and we have assessed Scottish Water's proposals in a similar manner³⁰.

Stage C Scope for improvements in efficiency.

Ofwat derives efficiency targets in Stage C that generally reduce the expenditure assumptions for price limits. As we have used an alternative methodology to derive the amount of expenditure at Stage A, we have also used a different approach in Stage C. We have, however, used Ofwat's cost base methodology to underpin our assumptions. We have assessed by how much Scottish Water can improve its efficiency in capital maintenance over the four year period.

• Stage D Impact of the improvement programme.

This stage takes into account the overlaps between the improvement programme and the base capital maintenance programme.

From our analysis we have drawn the following conclusions:

- Scottish Water's knowledge of the condition and performance of its assets is poor and it does not allow a sound, risk-based approach to capital maintenance planning to be adopted.
- Scottish Water is not adopting best practice under the principles of the Capital Maintenance Planning Common Framework (CMPCF).

 Synergies between the capital maintenance and quality programmes and between the capital maintenance programme and operating expenditure are not understood.

We set out the estimated required level of annual capital maintenance for Scottish Water in Table 7. We report our results for infrastructure and above-ground assets separately for the water and sewerage services. The four-year total may not add exactly due to rounding.

Table 7: Scottish Water's assessed capital maintenance requirements using Ofwat's models

	Water service	Sewerage service	Combined total	Four year total
Infrastructure assets	£29.3m	£24.1m	£53.4m	£213.6m
Above-ground assets	£50.0m	£43.0m	£93.0m	£372.0m
Service total	£79.3m	£67.1m	£146.4m	£585.5m

These results reflect the average level of efficiency in England and Wales in 2003-04. The best performing company incurred capital maintenance costs that were around 8% lower than those predicted by the econometric models.

We have allowed seven exceptional items.

Exceptional item 1 Contingency to address public health concerns - up to £20 million.

Exceptional item 2 Contingency to address environmental concerns - up to £20 million.

Exceptional item 3 To achieve CMPCF 'best practice' - up to £15 million.

Exceptional item 4 To achieve progress towards economic levels of leakage - up to £40 million.

Exceptional item 5 Transfer from quality investment programme, to meet iron and manganese drivers - £17.5 million (£22 million transferred, less efficiencies).

Exceptional item 6 Metering - up to £12 million.

Exceptional item 7 Quality programme - up to £20 million.

³⁰ Capital Maintenance Planning: A Common Framework, UKWIR/Tynemarch Associates, May 2002.

We also reallocated £0.7 million per year (£2.8 million over the period 2006-10) to operating costs to reflect Scottish Water's cost allocation practice for its central laboratory. We made a corresponding special factor allowance in operating costs.

Our view is that Scottish Water should not commit the resources made available to reduce leakage until it has agreed its economic level of leakage with the new Water Industry Commission. It should also agree with SEPA the priority areas for leakage reduction consistent with its economic level of leakage.

We have set a range for the allowed level of capital maintenance in this draft determination. Our final allowance for capital maintenance can only be determined once Scottish Water has had the opportunity to make representations on the draft determination.

In this draft determination we believe that the maximum level of capital maintenance should be £780 million. The lower end of our proposed range for the allowed level of capital maintenance is £647 million. Even this lower allowed level of capital maintenance is higher than an average company south of the border (in receipt of an upward adjustment for its use of the CMPCF) is likely to have required for an equivalent asset base. This compares with Scottish Water's estimated capital maintenance of more than £1 billion.

Financing the quality, growth and customer service investment necessary to meet ministerial objectives

The technical review of the programme by the Reporter and Faber Maunsell highlighted a number of issues in relation to Scottish Water's proposed investment programme. These included:

- duplication of project lines in the programme;
- inclusion of projects that did not meet ministerial objectives;

- inclusion of investment targeted at PPP schemes;
- a lack of a strategic approach in a number of areas;
- over-scoping of project solutions;
- over-reliance on the use of generic costing approaches; and
- duplication of outputs that were already required in Quality and Standards II.

Similarly, analysis of Scottish Water's project costs by both Ofwat and this Office indicated that, in certain areas of the programme, the costs per scheme proposed by Scottish Water significantly exceeded the costs put forward to Ofwat by the companies in England and Wales at the 2004 price review. There was also evidence that the costs per scheme in certain areas were significantly higher than the outturn costs for similar schemes in the current Quality and Standards II programme.

In the following sections we discuss the rationale for the changes we have made in more detail. It is important to note that we have not reduced, delayed or otherwise amended the outputs required by Ministers. For each area of the programme we have estimated the highest level of spending (pre-efficiency) that we consider to be appropriate. We also set the lowest level of investment that we believe, realistically, could be required.

Review of planned investment in drinking water quality

Scottish Water estimated that £1,064 million of investment is required to meet the Ministers' objectives for improvements to drinking water quality during the 2006-10 regulatory control period. This implied an investment of £266 million a year, or around £113 each year for every connected customer. In comparison, the total investment in England and Wales in the period 2005-10 is £425³¹ million a year, or around £18 each year per customer.

³¹ This figure is from Ofwat's final determination of water and sewerage charges 2005-10. It has been inflated by 5.46% to represent capital goods inflation between 2002-03 and 2003-04.

Water treatment works

Table C includes investment in improved drinking water quality at 239 of the 371 water treatment works in Scotland³². At a total cost of £831 million, this comprises more than 80% of the total investment in improvements in drinking water quality. This cost is around one-third higher than the cost in England and Wales to upgrade 239 works (where the average size of works is considerably larger).

The Reporter carried out site visits at a random sample of eight water treatment works. Faber Maunsell selected a further 36³³ water treatment works for site visits. They visited a representative range of works by size and by level of proposed investment. They also carried out desk top analysis of a further five sites.

This review indicated that there is considerable evidence that the investment required to meet the ministerial objectives had been scoped incorrectly. In particular, the use of generic solutions to establish investment needs at the smaller water treatment works appears to have led to a significant overestimate of the scope of the work required. Lack of strategic solutions also appears to have resulted in increased costs.

The Reporter concluded that the issues identified in relation to project scoping at water treatment works resulted in Scottish Water's cost estimates being around 15% too high. This was based on the limited sample of eight sites, which were reviewed in detail.

The analysis carried out by Faber Maunsell concluded that there were significant issues concerning Scottish Water's methodology for assessing the scope of work required at water treatment works. For example, when assessing 'need' Faber Maunsell discovered sites in the representative sample where there was no clear requirement to carry out the proposed works. Examples included sites where it was proposed to fit a new membrane treatment plant where one already existed at the site.

Faber Maunsell also identified a number of sites where strategic solutions, such as rationalising the number of water treatment works, had not been given proper consideration.

Faber Maunsell also found that the use of generic solutions in the costing process had led to major overscoping of requirements. Examples included costings for installing contact tanks where Scottish Water had costed new tanks of the total required volume, rather than adding additional volume to the existing tanks.

From their analysis, Faber Maunsell concluded that the degree of over-scoping in Scottish Water's proposals for water treatment works justified a pre-efficiency reduction in costs of between 45% and 55%.

We have reviewed the Reporter's and Faber Maunsell's findings in detail. We have concluded that there is significant opportunity to reduce the scope of investment at water treatment works. Our assessment is that this reduction lies within the range of 30% to 50% of Scottish Water's estimate. This would reduce the pre-efficiency total cost of the quality investment at water treatment works from £831 million to a highest estimated cost of £582 million and a current lowest realistic cost of £415 million.

Water resources

The Reporter and our engineering consultants have assessed Scottish Water's proposed investment of £135 million on water resources. This is primarily associated with the Water Framework Directive³⁴. They both concluded that costs in this area are very uncertain.

The Reporter commented that Scottish Water did not appear to have taken full account of the benefits available from reducing leakage.

The engineering consultants commented that further investigations (including the development of a water resources plan) are required to reduce uncertainties and that reducing leakage should be the preferred first choice for replacing lost supplies. They recommend that Scottish Water should establish economic levels of leakage in the water resource zones that are affected by the Water Framework Directive.

³² Scottish Water's second draft business plan includes proposals to reduce the number of operational water treatment works to 301 by 2009-10.

³³ In total, Faber Maunsell completed 37 site visits. However, one of these sites was also visited by the Reporter.

³⁴ The Water Framework Directive element of the water resources expenditure amounts to around £134 million. The remaining £0.9 million relates to flood studies to comply with the Reservoirs Act.

Based on the conclusions of the Reporter and of Faber Maunsell, we have set a range of between £94.3 million and £68 million for investment in water resources.

Security enhancement

The Reporter reviewed Scottish Water's proposed investment of £76 million for security enhancement at water treatment works and other assets. He concluded that Scottish Water's estimates of the required scope of work appeared to be conservative in a number of areas. He has also suggested that the unit costs used in its assessment appear high.

We have concluded that a reduction of 20% in Scottish Water's assessment of the costs for security enhancement is appropriate.

We have not made any other adjustments to the scope of Scottish Water's proposals for drinking water quality investment. The outcome of our review of the scope of the work required to meet the Ministers' objectives for drinking water quality is shown in Table 8.

Table 8: Outcome of our assessment of drinking water quality investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost total 2006-10	Highest estimated cost	Current lowest realistic cost	
Water treatment works	£830.8m	£581.6m	£415.4m	
Water mains rehabilitation (DW5 iron and manganese)	£22.2m	£0.0m	£0.0m	
Water resources (Water Framework Directive)	£134.7m	34.7m £94.3m		
Security enhancement at water treatment sites	£76.4m	£61.1m	£61.1m	
Customer requested lead pipe removal	£20.7m	£20.7m	£20.7m	
Other minor elements	£30.2m	£30.2m	£30.2m	
Scottish Water reduction for 'Programme overlap'	-£51.2m	-£35.9m	-£25.6m	
Total 2006-10	£1063.7m	£752.0m	£569.6m	

Review of planned investment in environmental objectives

Unsatisfactory intermittent discharges

The Reporter's review of Scottish Water's proposed investment in unsatisfactory intermittent discharges

(UIDs) indicated a number of significant concerns relating to the scoping and costing of the programme. These included:

- the use of a generic approach to develop solutions, with no allowance for the possible development of integrated catchment solutions;
- insufficient modelling work being carried out accurately to size the required solution – this was particularly the case for the three major catchments that impact on the programme for the 2006-10 regulatory control period;
- a particular concern regarding the algorithm that was used to generate storage volumes for combined sewer overflows (CSOs) that impact on bathing and shellfish waters;
- high unit costs for schemes;
- concerns about the assessment of interconnecting pipework costs; and
- concerns about the percentage of on-costs applied to the UID programme.

The Faber Maunsell team agreed that the proposed investment raised a number of issues. Examples of over-scoping of requirements included the following:

- The proposed solution for one UID project with an estimated cost of over £10 million was to fit a 1,120m³ storm tank and screen. Faber Maunsell concluded that the scheme as presented did not require a storage solution.
- An allowance at every site for a 50metre x 4.5metre access road and hard standing of 25m². In many cases the sites are on or adjacent to existing sites and roads.
- An assessed cost of £2.4 million for a storage volume of 70m³, equivalent to a standard double garage.

Faber Maunsell concluded that the extent of overscoping in the programme was sufficient to justify a reduction in the estimated costs of 58%. Scottish Water is also fixing many UIDs during Quality and Standards II. A review of the Quality and Standards II baseline investment programme would suggest that a current adjusted unit cost of £0.42 million would be appropriate. In England and Wales, the average preefficiency cost of 'AMP4³⁵' UID schemes in company submissions was £0.45 million³⁶. This would give a total programme cost of £126 million³⁷. The highest realistic cost would appear to be around £252 million³⁸.

We have accepted the Reporter's overall views on other aspects of the environmental quality programme. Our conclusions are shown in Table 9.

Table 9: Outcome of our assessment of environmental quality investment requirements (pre-efficiency)

Sub-categories	Adjusted Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost	
Unsatisfactory Intermittent Discharges	£601.0m	£252.4m	£126.0m	
Study work		£6.0m	£6.0m	
UID sub-total		£258.4m	£132.0m	
Sewage treatment work upgrade	£99.9m	£99.9m	£99.9m	
Septic tank upgrade	£12.0m	£12.0m	£12.0m	
IPPC ³⁹ schemes	£9.4m	£9.4m	£9.4m	
Landfill Directive	£3.5m	£3.5m	£3.5m	
Other minor programme elements	£3.6m	£3.6m	£3.6m	
Total 2006-10	£729.3m	£386.8m	£260.4m	

Review of planned investment on development constraints and first time connection

Scottish Water's second draft business plan proposes investment of £221 million to meet demand for new network capacity from new housing and businesses. It also proposes £70 million for the first time connection of existing properties to the public water and waste water networks. Part 3 costs relate to the costs of connections to the water or sewer mains. Part 4 costs relate to the costs of connections to the trunk mains and treatment

works. This was discussed in detail in Volume 3 of our methodology. This is shown in Table 10.

Table 10: Breakdown of Table C development constraint and first time connection investment

Sub-categories	Project cost totals 2006-10		
Development constraints 'Part 3'	£66.9m		
Development constraints 'Part 4'	£144.0m		
Development constraints water resources	£10.4m		
Total development constraints ⁴⁰	£221.4m		
First time provision 'Part 3'	£40.2m		
First time provision 'Part 4'	£29.9m		
Total first time provision ⁴¹	£70.0m		

Development constraints

The Reporter and our engineering consultants conducted a detailed review of the methodology employed by Scottish Water to estimate the investment required to release development constraints. They raised several concerns including:

- assumptions on leakage;
- assumptions on demand; and
- the overall methodology that Scottish Water had employed.

Based on our own analysis and the comments provided by the Reporter and our independent engineering consultants, we consider that the allowance for Part 4 costs for both water and waste water, and for water resources, should be reduced by between 15% and 25%. Part 3 costs can also be reduced significantly. We believe that Scottish Water should have used a higher discount rate and taken account of likely infrastructure charges in estimating Part 3 costs. These changes give a highest estimated cost for development constraints (pre-efficiency) of £193 million and a current lowest realistic cost of £170 million⁴².

³⁵ AMP4 is the investment programme in England and Wales for 2005-10.

³⁶ Inflated to 2003-04 prices.

³⁷ After removal of duplications and PPP works, and assuming 280 UID schemes.

³⁸ Based on the assessed reduction of 58% of the total UID programme cost, after the removal of duplications and PPP works.

³⁹ IPPC – Integrated Pollution Prevention and Control.

⁴⁰ Totals do not add due to rounding.

⁴¹ Totals do not add due to rounding.

⁴² Both costs include a £30 million contribution from connecting customers through the infrastructure charge.

First time provision

We have reviewed the comments of the Reporter and of our independent engineering consultants concerning Scottish Water's proposed investment for first time provision of water and waste water services to existing houses.

We have noted similar concerns to those expressed for development constraints above. We have also reduced the investment required for Part 4 constraints by between 15% and 25%, consistent with our approach for development constraints and for the same reasons. We note, however, that first time provision for water does not appear to form part of the Ministerial Guidance of February 2005. We will therefore require confirmation from Scottish Water that this investment is required to meet the Ministers' objectives.

The highest estimated cost for first time provision then becomes £62 million and the current lowest realistic cost £55 million⁴³.

A summary of our assessment of the pre-efficiency baseline investment programme for expenditure on development constraints and first time provision is shown in Table 11.

Table 11: Outcome of our assessment of development constraints and first time connections investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost	Contribution from connecting customers (infrastructure charge)	Highest estimated cost - contribution from customer base	Currrent lowest realistic cost - contribution from customer base
Development constraints 'Part 3'	£66.9m	£61.4m	£54.0m	£30.0m	£31.4m	£24.0m
Development constraints 'Part 4'	£144.0m	£122.4m	£108.0m	£0.0m	£122.4m	£108.0m
Development constraints water resources	£10.4m	£8.9m	£7.8m	£0.0m	£8.9m	£7.8m
Total development constraints	£221.4m	£192.7m	£169.9m	£30.0m	£162.7m	£139.9m
First time provision 'Part 3'	£40.2m	£36.9m	£32.4m	£10.0m	£26.9m	£22.5m
First time provision 'Part 4'	£29.9m	£25.4m	£22.4m	£0.0m	£25.4m	£22.4m
Total first time provision	£70.0m	£62.2m	£54.8m	£10.0m	£52.3m	£44.9m
Total for growth investment	£291.4m	£254.9m	£224.7m	£40.0m	£214.9m	£184.7m

⁴³ Both costs include a £10 million contribution from connecting customers through the infrastructure charge.

Customer service

We have accepted the pre-efficiency costings in this area. We have also added £15 million (pre-efficiency) to cover the costs of establishing the competition framework.

Summary

A summary of the changes to the baseline investment programme resulting from our review process is shown in Table 12.

Table 12: Summary of the proposed changes to the baseline investment programme

Investment category	Project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost	
Drinking water quality	£1063.7m	£752.0m	£569.6m	
Environmental	£845.2m	£386.8m	£260.4m	
Customer service + initial retail investment	£84.1m	£98.4m	£98.4m	
Growth (contribution from the customer base)	£291.4m	£214.9m	£184.7m	
Total 2006-10	£2,284.4m	£1,452.2m	£1,113.1m	

Allowed level of capital expenditure

We have applied the cost base efficiencies to the programme in Table 12. The resulting post-efficiency investment profile, including the capital maintenance element, is shown in Table 13. The totals may not add exactly due to rounding.

Table 13: Allowed level of capital expenditure 2006-10

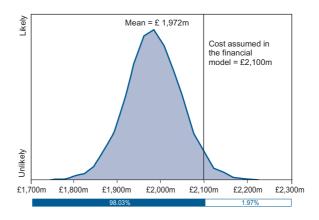
	2006-07	2007-08	2008-09	2009-10	Total
Draft determination					
Capital maintenance, current lowest realistic	£90.9m	£171.1m	£187.3m	£197.6m	£646.9m
Capital maintenance, highest estimated	£109.6m	£206.3m	£225.9m	£238.3m	£780.0m
Water quality, current lowest realistic	£63.4m	£119.3m	£130.6m	£137.8m	£451.1m
Water quality, highest estimated	£89.4m	£168.3m	£184.2m	£194.3m	£636.2m
Waste water quality, current lowest realistic	£29.0m	£54.5m	£59.7m	£63.0m	£206.2m
Waste water quality, highest estimated	£46.0m	£86.5m	£94.8m	£99.9m	£327.2m
Customer service, current lowest realistic	£9.3m	£17.5m	£19.1m	£20.2m	£66.1m
Customer service, highest estimated	£9.9m	£18.7m	£20.4m	£21.6m	£70.6m
Growth, current lowest realistic	£21.9m	£41.2m	£45.2m	£47.6m	£156.0m
Growth, highest estimated	£26.8m	£50.5m	£55.3m	£58.3m	£190.8m
Introduction to competition, lowest estimated	£8.5m	£2.4m	£0.5m	£0.5m	£11.9m
Introduction to competition, highest estimated	£9.1m	£2.6m	£0.5m	£0.5m	£12.7m
Total Quality and Standards III, current lowest realistic	£222.9m	£406.1m	£442.4m	£466.7m	£1,538.2m
Total Quality and Standards III, highest estimated	£290.8m	£532.8m	£581.1m	£612.9m	£2,017.5m
Overhang from Quality and Standards II	£224.6m	£28.4m	£0.0m	£0.0m	£253.0m
ESWA unsubstantiated efficiency adjustment	-£14.4m	-£13.9m	-£13.5m	-£13.1m	-£54.9m
Grand total, current lowest realistic	£433.2m	£420.6m	£428.9m	£453.5m	£1,736.2m
Grand total, highest estimated	£501.0m	£547.3m	£567.5m	£599.8m	£2,215.6m

Assessment of the level of investment included in the financial model

In setting a level of capital investment for the financial model we have taken account of the scope for efficiency and the range of investment we consider could be required. We examined each category of capital investment where we had identified a range of possible costs. We assumed that there was only a 5% chance of costs being lower than the minimum values that we identified, and a 5% chance of costs being higher than the maximum values.

We carried out a risk analysis that combined the ranges that we had estimated. The result of this analysis was a probability distribution for the cost of the entire capital programme. Figure 7 shows the results of our risk analysis.

Figure 7: Results of risk analysis on capital investment costs 2006-10



This analysis suggested that, given the ranges we described above, there is less than a 2% chance that the required capital programme will exceed our estimate of £2,100 million (2003-04 prices). This includes Scottish Water's full claim for the Quality and Standards II overhang⁴⁴. We have also taken account of the unsubstantiated claim for capital expenditure efficiency made by the former East of Scotland Water Authority in 2001⁴⁵.

⁴⁴ Adjusted only for inflation in the next regulatory control period. It would not, in our view, be reasonable to ask customers to pay more because of the late delivery of the Quality and Standards II investment programme.

⁴⁵ See background in Chapter 6.

Our review will ensure that customers can benefit from the objectives set out in the Ministers' Guidance of February 2005 at the lowest reasonable overall cost. It may be that a further reduction in Scottish Water's proposed capital programme will be warranted after our review of the investment programme has been completed.

Infrastructure renewals charge

Infrastructure assets are generally underground assets with long useful lives. These lives, however, tend to be difficult to assess accurately. The rate of wear will vary with a range of factors such as construction method, choice of material, soil type, climate and usage. This makes it difficult to assess the annual cost of use of the infrastructure.

The underground network will never be replaced in its entirety. Instead, sections are renewed when their condition and performance deteriorates to the point where it is cost-effective to replace them (reducing repair costs, for example) or it is necessary to replace them in order to maintain customer service levels (to reduce interruptions, for example).

We analysed the infrastructure renewals charges of the companies south of the border relative to the assets and customers served. This analysis would suggest that the total infrastructure renewals charge (IRC) for Scottish Water in 2003-04 should have been in the range £45 million to £75 million. Its actual IRC in 2003-04 was £143 million.

If we assume that the 22% increase 46 in maintenance that is allowed by Ofwat applies equally to both infrastructure and non-infrastructure assets, then we may expect an IRC of around £55 million to £90 million in 2003-04 prices. If outturn inflation is 2.5%, this would suggest that by 2009-10 the IRC could be as high as £65 million to £105 million.

Based on this evidence, we have allowed Scottish Water an IRC of £79 million per year in 2003-04 prices (£86 million in 2005-06 prices).

Depreciation

Depreciation is the mechanism by which we recognise that the effectiveness and value of assets declines over time. This is a cost that should be borne by customers as they receive the benefit from use of the assets.

Establishing the appropriate depreciation charge for an asset involves three critical elements:

- estimating the asset's useful life,
- the choice of depreciation method, and
- valuing the asset.

Our approach to calculating Scottish Water's depreciation charge is consistent with Ofwat's approach in England and Wales. In this draft determination, therefore, our approach to calculating depreciation:

- uses Ofwat's five-step classification of asset life, ranging from very short to long;
- establishes the economic value of the asset on the basis of a modern equivalent asset valuation; and
- assumes straight-line depreciation over the life of the asset.

We have added the ongoing depreciation charge on existing assets to the depreciation charge on new assets that are expected to be added during this regulatory control period. This is set out in Table 14.

Table 14: Total depreciation charge 2006-10

Annual depreciation (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very short	£16.6m	£23.1m	£23.4m	£24.0m
Short	£58.7m	£66.2m	£74.7m	£84.0m
Medium	£59.3m	£64.5m	£70.2m	£76.3m
Medium long	£8.4m	£9.7m	£11.1m	£12.7m
Long	£44.1m	£47.7 m	£51.3m	£55.3m
Total	£187.2m	£211.2m	£230.7m	£252.3m

Corporation tax

Scottish Water has not yet had to pay any significant amounts of corporation tax. This reflects accumulated losses inherited from the three predecessor authorities.

⁴⁶ This is the average increase in capital maintenance investment allowed by Ofwat in its 2004 price review following its assessment of companies' application of CMPCF.

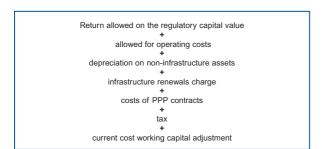
Changes to accounting rules are likely to increase the tax paid by the water industry both north and south of the border. We have decided to take a conservative approach in our calculation of the potential tax liability (i.e. the highest realistic estimate of the tax payable) that will be faced by Scottish Water. This reflects a clear concern of customers that charges should be as predictable as possible.

Introducing the RCV method of charge setting

Our move towards the RCV method of charge setting at this draft determination will have no material impact on the charges faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure.

Under the RCV method of charge setting, the revenue that Scottish Water should be allowed is calculated as set out in Figure 8.

Figure 8: The calculation of revenue



Scottish Water will receive an appropriate rate of return on its RCV. The RCV is a proxy for the current value in use of Scottish Water's above-ground asset base. This value will change over time to reflect the ageing (use) of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets. The current below-ground assets (infrastructure) are considered to be assets that are required in perpetuity and are therefore not included in the RCV. The cost of maintaining and replacing infrastructure assets is met through the annual infrastructure renewals charge.

The level of the RCV does not, by itself, impact on the charges that customers pay. It is the cash return allowed

on the RCV that determines the level of charges. The second element of the calculation of the allowed return on the RCV is the rate of return.

We multiply the rate of return by the RCV (adjusted in future years to reflect investment, depreciation and inflation) to establish the cash return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers.

Moving towards the RCV approach to charge setting has several key benefits. Firstly, it should provide a basis for incentives for management that will be transparent, published in advance and objectively measurable. A further benefit of our RCV approach is that it allows us to compare financial ratios on a like-for-like basis with other regulated utilities, so providing a better indication of financial sustainability.

In the longer term, an important feature of the RCV method of charge setting is that it does not require the regulator to determine how much Scottish Water should seek to borrow or how much the Scottish Executive should seek to lend⁴⁷.

The allowed rate of return

The allowed rate of return is the rate of return that we believe Scottish Water requires in order to meet the objectives that have been set by the Scottish Ministers. Our role is to set maximum charges which are consistent with delivery of these objectives at the lowest reasonable overall cost.

We have sought a balance between current and future customers by ensuring that the allowed rate of return is only just high enough to cover the costs of the benefits provided to current customers.

As a public corporation, Scottish Water has only two sources of funds: revenue from customers and new debt. Scottish Water does not borrow directly from the capital markets, nor does it borrow at commercial rates. Scottish Water borrows from the Scottish Consolidated Fund at public sector borrowing rates.

⁴⁷ See Chapter 19 for more detail of how we set the initial RCV.

Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers.

We have decided to apply a modified version of the weighted average cost of capital (WACC) approach that is used by the regulators of private sector companies. We have combined an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return⁴⁸.

The future real rate of interest on debt for Scottish Water was estimated by looking at an average of current borrowing rates faced by Scottish Water. We concluded that a nominal pre-tax cost of debt of 4.6% was reasonable.

We have also, however, made an allowance for the full cost of embedded debt⁴⁹.

We have set the pre-tax allowed rate of return on the customer retained earnings at the post-tax allowed rate of return for debt. We believe that it is appropriate for customers to finance a relatively low return on the customer retained earnings. There is consequently no incentive for Scottish Water to seek to change its current ratio of debt to its regulatory capital value.

The allowed rate of return on customer retained earnings is 3.22%⁵⁰.

How we set the initial RCV

We believe that a variant of the comparator approach to setting the initial RCV is the most appropriate. This approach is consistent with that which Ofwat used to set the RCV of the water only companies.

We have set the initial RCV such that if Scottish Water meets the terms of its regulatory contract, it will be in a financially sustainable position by the end of the regulatory control period. In other words, the cash allowed rate of return in 2009-10 (given the allowed levels of operating cost, capital expenditure and depreciation) is sufficient to ensure that all of the targeted cash-based financial ratios are met at the end of the regulatory control period. We then used the comparator method to assess the reasonableness of this initial regulatory capital value.

Our calculation of the initial RCV is shown in Table 15. We have adjusted the average RCV in 2006-07. This reflects investment during 2006-07 and the reduction in the RCV that we included to compensate customers for the overhang from Quality and Standards II⁵¹.

Table 15: Calculation of the initial RCV (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
New investment	£534.3m	£593.0m	£633.3m	£689.5m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

An initial RCV of £3,794.3 million (£3,519.8 million plus £274.5 million 52) is consistent with achieving financial sustainability.

We chose to use the water and sewerage companies in England and Wales as the comparators. We did not use the water only companies because they do not provide a reasonable comparator with the scope of activities that is undertaken by Scottish Water. This confirmed the reasonableness of our initial RCV⁵³.

⁴⁸ This equity (unleveraged) portion of the RCV is equivalent to the Glas Cymru financial buffer.

⁴⁹ Embedded debt is debt taken out prior to April 2004 that carries a higher coupon than the allowed rate of return.

 $^{^{50}}$ $\,$ 4.6% less value of the 30% corporation tax shield (1.38%).

⁵¹ The value of the overhang at the start of the 2006-07 financial year.

See Chapter 19.

⁵³ We discuss the extent of the investment overhang from Quality and Standards II in Chapter 6 of this volume. We also discuss how we have taken account of the unsubstantiated efficiencies claimed by East of Scotland Water Authority.

Summary of costs of funding the capital programme

The total asset financing costs in this draft determination are outlined in Table 16.

Table 16: Total asset financing costs 2006-10

Cash allowed return on the RCV	2006-07	2007-08	2008-09	2009-10
Cash allowed return on the RCV	£182.7m	£195.9m	£209.6m	£224.8m
IRC	£88.6m	£91.2m	£94.0m	£96.8m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Total	£458.4m	£498.3m	£534.3m	£573.9m

Section 1: Introduction and background Chapter 1: Introduction

Introduction

The capital programme is Scottish Water's largest single element of expenditure. In recent years, annual capital investment has ranged from £350 million to £520 million⁵⁴. This represents around £200 every year for each connected customer.

This high level of investment is required both to maintain the performance of the existing network and to fund required improvements to water quality, environmental performance and customer service. Ongoing investment is essential if we are to have a sustainable water industry that meets our public health and environmental expectations.

It is important for Scottish Water to invest sufficiently in order to maintain the assets that provide services to customers. If insufficient maintenance funding is made available then customer service levels will fall and expected improvements in the environment or in water quality may not materialise. If too much funding is provided then there may be inefficiency and customers' money could be wasted.

Scottish Water must invest to ensure compliance with European Union (EU) directives on public health and the environment. It is, however, the EU member state that carries the risk of non-compliance, not Scottish Water.

It is also an important principle that customers should pay for the level of service they receive. We have taken steps at this Strategic Review to ensure that the way in which capital expenditure is funded is more transparent.

In this volume we set out our assessment of the funding required to finance the capital programme. We explain fully how we have reached our conclusions. Customers and stakeholders can be confident that the funding that is made available is sufficient to deliver the objectives established by Ministers for the water industry in Scotland over the next four years. This significant expenditure on capital is an important element of the regulatory contract between customers and Scottish Water. Customers will fund these improvements and it is vital that they are delivered in a timely fashion.

54 This excludes investment delivered through PPP schemes.

This volume contains five sections:

Section 1 contains two chapters and introduces the volume.

- Chapter 1 is this Introduction.
- Chapter 2 discusses background issues. These include how we dealt with capital funding in the last Strategic Review and the factors that have led to changes in our approach for this Review.

Section 2 contains five chapters. It begins with a discussion of the Quality and Standards II and Quality and Standards III processes. It then outlines our assessment of the scope for capital efficiency in delivering the investment programme.

- Chapter 3 describes the Quality and Standards II investment programme covering the period 1 April 2002 to 31 March 2006.
- Chapter 4 discusses Scottish Water's performance in delivering Quality and Standards
 II and the impact that this has had on the Strategic Review of Charges 2006-10.
- Chapter 5 describes the Quality and Standards
 III investment programme.
- Chapter 6 discusses the issues associated with the transition from the Quality and Standards II period to Quality and Standards III.
- Chapter 7 describes our approach to the assessment of the scope for capital efficiency.

Section 3 contains four chapters. It deals with Scottish Water's Public Private Partnership (PPP, or formerly Public Finance Initiative) contracts.

- Chapter 8 provides background information about Scottish Water's PPP contracts.
- Chapter 9 explains why it is important for us to assess these contracts as part of establishing the funding requirements for the industry in Scotland.

- Chapter 10 outlines our approach to analysing Scottish Water's PPP contracts.
- Chapter 11 discusses the way forward with PPP.

Section 4 contains ten chapters. It covers the financing of the required capital programme. As such, it begins by explaining the approach that we have taken to make the financing of the capital programme more transparent. It then explains our review of the investment programme contained in the second draft business plan of Scottish Water. This is the investment required to meet the Ministers' objectives for the water industry in the 2006-10 regulatory control period. The definition of the level of investment required to meet the Ministers' objectives impacts on the level of depreciation and infrastructure renewals charges. The section concludes with an explanation of how we have calculated the cash allowed for return to finance the investment programme.

- Chapter 12 explains the introduction of a regulatory capital value (RCV) for Scottish Water and the advantages of this approach.
- Chapter 13 explains our assessment of the allowed level of capital maintenance and of an appropriate infrastructure renewals charge.
- Chapter 14 sets out our assessment of the level of investment required to meet the Ministers' essential and desirable objectives.
- Chapter 15 summarises the total investment programme required to meet the Ministers' objectives.
- Chapter 16 explains our calculation of depreciation. This depreciation charge covers the costs of refurbishing the above-ground assets to maintain the level of service provided to customers.
- Chapter 17 discusses the important issue of corporation tax.

- Chapter 18 discusses the 'allowed rate of return' that we have set for Scottish Water. This is effectively an estimate of the cost of capital for a public sector regulated body.
- Chapter 19 describes how we have set the initial RCV for Scottish Water.
- Chapter 20 is a summary of our assessment of the various costs of funding the capital programme.
- Chapter 21 is a sensitivity analysis of the cash allowed return on the RCV. This chapter reviews the sensitivity of customers' bills to changes in the value of the initial RCV and the allowed rate of return.

Section 5 contains one chapter. This section describes how we propose to monitor performance in delivering the investment component of the regulatory contract.

 Chapter 22 explains how we will monitor delivery of the investment programme.

Section 1: Introduction and background

Chapter 2: Background

Introduction

Capital expenditure is crucial to ensuring that levels of service to customers are maintained and that improvements in water quality, environmental standards and customer service are delivered.

This chapter explains the importance of proper capital expenditure. It provides a general introduction to the funding of capital expenditure and compares our approach in this strategic Review with our approach at the Strategic Review of Charges 2002-06. We will explore the financing of the capital programme in more detail in later chapters of this volume.

Scottish Water's assets

Capital expenditure is the cost incurred in creating, maintaining and enhancing the assets of a business. Scottish Water has a large number of assets that it uses to provide a water and waste water service. These include:

- water storage facilities;
- water mains:
- water treatment works;
- sewers;
- sewage treatment works;
- pumping stations;
- offices and depots; and
- · vehicles and IT equipment.

It is important to maintain these assets appropriately and to be in a position to replace those assets that reach the end of their useful lives and must be replaced. There is also a continuing pressure to improve the level of customer service and the quality of treated water and discharges of waste water to the environment and to service new development. Meeting these expectations will entail further investment in new assets to improve or expand the service.

The assets required to deliver water and waste water services can be divided into five broad types:

Water infrastructure – the underground network of pipes, pumps and valves through which water is supplied to customers. Water infrastructure also includes dams, reservoirs and raw water aqueducts.

Water non-infrastructure – water treatment works, pumping stations, service reservoirs and water towers.

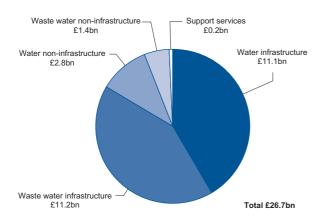
Waste water infrastructure – mainly comprises sewers that collect sewage and storm water and transport it to where it can be treated. This category also includes sea outfalls.

Waste water non-infrastructure – waste water treatment works, pumping stations and sludge treatment facilities.

Support services – operational assets that are essential to effective management of the business, including vehicles, information systems, offices, depots and stores.

In its 2003-04 Annual Return, Scottish Water estimated that it would cost approximately £27 billion to replace all of the public water and sewerage assets (pipes, valves, treatment works and so on) in Scotland. This gives a good idea of the extent of investment that has had to take place to achieve the water and sewerage service we have now. It is important that we maintain these assets appropriately. The replacement cost of these different asset types is summarised in Figure 2.1.

Figure 2.1: Asset replacement cost⁵⁵



Capital expenditure in the Scottish water industry

It is necessary to invest in water and waste water assets for the following reasons:

- To maintain the level of service to customers –
 this investment is often termed capital maintenance.
 The assets of any business need to be replaced at
 the end of their useful lives if the business is to
 continue.
- To improve the quality of service to customers and the public – this investment is often termed capital enhancement, or quality investment. Investment in assets is necessary to meet higher environmental and quality standards.
- To respond to customers' changing demand patterns – this investment is often termed capital enhancement or growth investment. The assets' capacity may need to be increased in order to meet both the demands of new customers and growth in usage from existing customers.

We believe that maintenance of assets should be the highest investment priority for Scottish Water. The sustainability of the water industry in Scotland and its ability to deliver environmental, public health and customer service improvements depends on adequate maintenance on an ongoing basis.

Investment in water and waste water assets is also necessary to meet higher environmental and quality standards or to increase the level of service to customers, rather than simply replacing assets on a 'like-for-like' basis to maintain the water and waste water service.

Scottish Water will have to invest in a number of areas in order to meet the standards that have been, and will continue to be, set by environmental protection and public health legislation. In addition to this, it is important to strive for improvements in service reliability and standards for customers.

Customers require services to be available 'on demand' and at 'reasonable cost'. The capital investment programme must therefore be delivered to meet the requirements of customers and environmental regulations now, and in the medium term, while reconciling this with the long-term nature of the water and sewerage business and the significant replacement cost of the assets.

Capital expenditure represents a significant proportion of Scottish Water's total outgoings. In 2003-04, when Scottish Water spent £389 million on capital expenditure, this accounted for just under 40% of its total expenditure of £1,019 million for the year. This is shown in Table 2.1 below.

Table 2.1: Outline of expenditure 2003-04

	2003-04
Capital expenditure	£389m
Operating expenditure	£309m
Public Private Partnerships	£112m
Spend to save	£72m
Interest	£137m
Total	£1,019m

⁵⁵ Scotish Water's Annual Return for 2003-04

Borrowing to fund capital expenditure

Water and sewerage assets may have quite short lives (for example IT), or very long lives (for example, trunk sewers). The funding for investment can come from two sources – new debt and/or post-tax surpluses earned by Scottish Water.

The investment programme will benefit customers, both now and in the future. However, we believe that each generation of customers should pay the full cost of the water and sewerage services it consumes.

If post-tax retained surpluses are used to fund a significant proportion of new investment, the impact will be that future customers pay relatively less, but that current customers pay relatively more for the improvement in service they receive.

Effective price regulation also requires management to face a hard budgetary constraint if customers are to have confidence that they will focus on improving efficiency. Any business could, at least in theory, borrow more cash in order to cover any or all of its costs. However, any borrowings will need to be repaid, with interest, from future revenues. In other words, continuing to borrow to cover current costs will mean that revenues have to increase to meet the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditure faced by the water industry, borrowing is only delaying and worsening the charge levels that future generations face. Unless revenues are brought broadly into line with the average continuing annual obligations of the water industry, there will be a continuing need to increase borrowing in order to balance the books at the end of the financial year.

Financial sustainability is achieved when the growth in new debt in each year is broadly limited to the growth in the free cash flow available to service that debt. A sustainable business requires interest charges over the long-term to remain at about the same percentage of the cash generated from operations. Some commentators have referred to the Treasury's 'Golden Rule' to suggest that current charges could have been lower if more borrowing had been available. The Treasury's 'Golden Rule' was introduced to ensure that, as a country, we measure the level of our current consumption accurately. The rule warns against using borrowing to meet the costs of current consumption. It also makes it clear that borrowing should be affordable and sustainable. By moving towards an RCV approach to price setting, we ensure that there will be a transparent and sustainable level of borrowing and that both current and future customers will be fairly treated.

Approach at Strategic Review of Charges 2006-10

Scottish Water has made progress in its understanding of its asset base. As a result, at this Review we have introduced an RCV for Scottish Water and have moved towards the RCV method of charge setting. We do not believe that move to the RCV method of charge setting will have any immediate material impact on the charges faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure. The changes are designed principally to allow greater transparency.

Most other utility regulators establish an appropriate level of revenue by using an RCV. This Review will bring the approach to charge setting for Scottish Water into line with that for the English and Welsh water and UK energy sectors. It also reflects the views of the Competition Commission (formerly the Monopolies and Mergers Commission). The approach allows us to make more direct comparisons of financial ratios and risks to customers than was possible previously.

The RCV is the value in-use of the physical assets used to provide a service to customers and on which it should earn a return. Obviously this value will change over time. As the assets represented by the RCV grow older, their physical usefulness declines. As a result, the financial value of the assets also declines. We refer to this reduction in value over time as depreciation.

The RCV approach ensures that customers only pay for new capital expenditure as and when it is actually delivered and not before. When Scottish Water invests in new assets, the efficient value of that asset is added to the RCV. This increases prices to customers and so they are paying for expenditure that has actually occurred and is in use. Scottish Water will only earn a return once a project has been delivered and the efficient cost of that project is added to the RCV.

Our approach at the last Review relied on forecasts of capital expenditure expected in each year. We set customer charges to cover this. There was a risk that customers would be charged for investment that did not, for whatever reason, occur in the year.

The RCV method of price setting has a second important advantage. At the last Review, we had to make a judgement on how much investment should be funded from revenue and how much from new borrowing. The RCV method of price setting does not require the regulator to determine how much Scottish Water should seek to borrow or how much the Scottish Executive should seek to lend. The onus is on the management of Scottish Water and its owner, the Scottish Executive, to ensure that the agreed levels of service and investment programme are delivered.

In their February Guidance, Ministers indicated a desire to see the financial strength of Scottish Water improve over the regulatory control period. We have measured the financial strength of Scottish Water for this purpose using the debt to RCV ratio⁵⁶.

Summary

Capital expenditure represents a significant proportion of Scottish Water's expenditure. It is essential to the maintenance and improvement of the level of service provided to customers and compliance with public health and environmental standards.

We have adapted the approach that we used to fund 2002-06 and moved towards a regulatory capital value method of charge setting. This reflects improvements in

capital expenditure in the Strategic Review of Charges

the level of understanding that Scottish Water has about its asset base. This change in approach will bring the Scottish Water industry into line with the other utility providers in the rest of the UK, enabling more direct comparisons to be made of performance and costs.

Our move towards the RCV method of price setting also ensures that customers do not pay for capital expenditure until it has actually been delivered.

These issues are discussed further in Section 4 of this volume.

⁵⁶ This is discussed in more detail in Volume 7.

Section 2: Capital expenditure Chapter 3: Quality and Standards II

Introduction

In making investment decisions, it is necessary to strike a balance between a number of priorities, including:

- maintaining the assets appropriately;
- improving compliance with public health and environmental standards;
- improving customer service; and
- connecting more properties to the water and waste water network.

Total investment is limited not only by the impact on customers' bills but also by the physical size of the investment programme that Scottish Water can manage efficiently and effectively. There are also practical limits on the capacity of the civil engineering market in Scotland to deliver the required investment.

Scottish Ministers establish investment priorities for the Scottish water industry through the Quality and Standards process. The Quality and Standards process brings together a range of stakeholders to define the level and scope of investment in the water industry. This process specifies the level of service to customers, and the environmental and water quality standards that the water industry in Scotland must deliver.

The Scottish Executive introduced the Quality and Standards process in 1999 to ensure a coordinated approach to assessing the required level of investment for the industry. Quality and Standards I established the investment priorities of the three former water authorities for 2000-01 and 2001-02. Scottish Ministers published their decisions in November 1999. This was the first time that the aims of investment in the water industry had been clearly and publicly documented.

Quality and Standards I defined what the Scottish Executive expected the three former water authorities to deliver in terms of drinking water quality, safe and sustainable sewage disposal and environmental protection.

Quality and Standards II set investment priorities for the period from April 2002 to March 2006. This chapter discusses the difficulties that have arisen in defining and monitoring the outputs established by Quality and Standards II. We have sought to learn from these difficulties. It is important that the Quality and Standards III investment programme clearly defines each project required to deliver improvements to the environment, public health and customer service.

Development of Quality and Standards II

In January 2001, the Scottish Executive published a consultation document⁵⁷ setting out clear options for the water authorities' investment programmes during the Quality and Standards II period.

Ministers sought customers' views on the investment priorities of the water authorities for the 2002-06 regulatory control period. The consultation document outlined three options:

Minimum option: Investing only to meet the legal standards set by regulations on water and sewage treatment. This option used low-cost solutions and did not fully address maintenance of existing assets, such as treatment plants, water mains and sewers.

Central option: Investing at a level that met legal standards and allowed for some improvement in the above-ground asset base, but not sufficient to improve the condition and performance of the underground infrastructure.

Enhanced option: Investment at this level would allow substantial progress in improving the industry's assets. Only this option included significant resources to remove development constraints and provide first time water and sewerage connections.

Customers' views were also sought about the speed with which underground assets should be replaced. The consultation clearly highlighted that the quick-fix method was cheaper in the short term but more costly in the long run.

⁵⁷ Scottish Executive, 'Water Quality and Standards 2002-06', 2001.

There were 40 responses to the consultation. The majority of the responses came from local authorities and environmental organisations. Only 5% of respondents supported the minimum option, even though this would have meant that charges for customers would have been lower. Some 42% of respondents (including the Scottish Environment Protection Agency, SEPA) supported the enhanced option. These respondents argued that there was a clear opportunity to invest properly in Scotland's water services, and to deal with the backlog of underinvestment in the underground network of pipes. They argued that this would improve the level of service to customers by reducing the risk of burst water mains and flooding from sewers. Some 33% including the three water authorities and this Office, supported the central option. The remaining 20% did not indicate a preference.

In August 2001, the Minister for the Environment and Rural Development, Ross Finnie MSP, decided that the central option "struck the right balance between environmental and public health improvements and affordability for customers"⁵⁸.

The Minister also took account of views expressed in the consultation that money should be available to help ease constraints on new developments, and to allow first time sewerage provision in rural areas. An additional £50 million⁵⁹ of 'high priority' expenditure was made available for this purpose.

The investment programme was summarised in 'Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-2006', which was published in August 2001. This indicated that the cost of the investment programme would be £2.34 billion.

In the Strategic Review of Charges 2002-06 we examined the scope for capital efficiency in the Quality and Standards II investment programme. We advised Ministers that efficiency savings of around £500 million were possible. Our analysis showed that Scottish Water should be able to deliver all of the required outputs for £1.81 billion. Ministers accepted this advice.

In the Strategic Review of Charges 2002-06, we forecast a rate of capital expenditure inflation (COPI) of 1.5% a

year. COPI has consistently continued at a higher level than we had expected and this is likely to increase the efficient cost of delivering Quality and Standards II to approximately £1.93 billion. Scottish Water is therefore required to deliver the Quality and Standards II outputs for this revised amount.

Definition of the Quality and Standards II investment programme

The Scottish Executive's summary of Quality and Standards II outputs contained more detail than the summary of Quality and Standards I. The outputs set out in the summary included:

- relining or replacing 3,506 km of water mains across Scotland;
- reducing to 3,300 the number of properties suffering from poor pressure in the former East of Scotland Water Authority's area; and
- providing secondary treatment of waste water for 85% of properties in the former North of Scotland Water Authority's area.

The summary also included the following additional higher level outputs:

- a reduction in the number of properties affected by low pressure, a decrease in the number of bursts and an improvement in water quality; and
- a reduction in the number of properties liable to sewer flooding, a reduction in the number of sewer blockages and an improvement in the environment.

These high level outputs were not sufficiently well defined to allow us to monitor progress in their delivery.

WIC 18

When we need to collect information that is not included in the regular regulatory returns, we write to the Chief Executive of Scottish Water⁶⁰ asking for the required

From 'Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-2006', August 2001, Foreword by Ross Finnie MSP.

⁹ This £50 million was subject to the efficiency targets set in the Strategic Review of Charges.

⁶⁰ Before April 2002 we wrote to the Chief Executives of the three water authorities. These letters are available on our website and in Appendix 10.

information. These letters are called WIC letters. In May 2001 we wrote the WIC 18 letter, 'Quality and Standards final output'⁶¹. This letter asked the three authorities to provide a project by project definition of their proposed investment programme. This proposed programme needed to be consistent with the outputs of Quality and Standards II.

We did not envisage that the authorities would find it difficult to provide this information, as they had already provided detailed costs for Quality and Standards II. North of Scotland Water Authority and West of Scotland Water Authority were able to provide a substantially complete investment programme, with a detailed breakdown of projects. We had a number of questions relating to specific projects, particularly the inclusion of 'spend to save' projects, which were funded separately and should not have formed part of the baseline programme.

East of Scotland Water Authority provided a summary list with an insufficient breakdown to allow project level monitoring. We asked for more detailed information about the specific projects which the authority intended to undertake. We also asked the authority to substantiate its claim of capital efficiency which it had included in its costing of Quality and Standards II. East of Scotland Water Authority, however, failed to provide the required level of detail. When Scottish Water was formed in April 2002, this problem had still not been properly addressed.

Following its creation, Scottish Water began a process of reviewing the entire capital investment programme. We understand the reasoning behind this decision. However, our concern continued to be to make sure that customers received value for money; we therefore still wanted to achieve clarity on the baseline investment programme.

East of Scotland Water Authority's claimed efficiencies

Our initial concern was to gain better information about £114 million of efficiencies that the former East of Scotland Water Authority had claimed in its development of Quality and Standards II. If the claimed efficiencies were not substantiated, customers faced higher bills than would otherwise have been allowed because the efficiency target applied to East of Scotland Water Authority in the Strategic Review of Charges 2002-06 reflected the claimed efficiency⁶². During 2002, we had protracted discussions with Scottish Water about the claimed capital efficiencies; it became apparent that no definitive list of projects existed to substantiate East of Scotland Water Authority's efficiency claim.

Agreeing the baseline programme

We continued to require Scottish Water to provide a fully defined investment programme.

The first step was to ensure that the investment programme contained sufficient detail for us to be able to monitor its delivery. This was particularly difficult for the East of Scotland Water Authority investment programme, which included a number of high-level projects such as 'East of Scotland Water reservoirs' and 'corporate billing systems'. We could not monitor the delivery of such high-level projects. It was important to break these down into individual, named projects with specific outputs. We also needed this level of detail in order to ensure that the quality regulators were content with the full detail of the Quality and Standards II programme.

The next step in defining an appropriate baseline for the investment programme was to review the detailed project list and to establish whether each proposed project was necessary. A number of workshops were held in March 2003 where key stakeholders examined the WIC 18 programme lists, line by line, and allocated projects into two distinct categories:

- The 'red' category meant that the project was no longer required and could be replaced by an alternative project.
- The 'green' category was reserved for those projects which delivered agreed Quality and Standards II outputs.

⁶¹ The WIC 18 letter is published in Appendix 10.

The overall efficiency applied to East of Scotland Water Authority was 11%, compared with 26% for North of Scotland Water Authority and 27% for West of Scotland Water Authority. See Strategic Review of Charges 2002-06, Table 19.12, Page 207.

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We set up a steering group to oversee this process and to develop a 'substitution process'. The substitution process allows the 'red' projects to be exchanged for alternative projects that provide an equivalent set of outputs.

The steering group also sought to resolve a number of other issues, relating to the baseline programme, which emerged during this initial review. These included the following:

- Inclusion in the original WIC 18 submissions by the three authorities of £103 million of 'spend to save' projects. Spend to save investment had been funded separately, so should not have been included in the baseline programme. Our view was that replacement projects were required for this investment. However, Scottish Water asserted that removing these projects formed part of the required capital efficiency and that there was therefore no justification for replacement projects.
- The definition of projects (totalling £50 million) to ease development constraints and help with first time sewerage provision in rural areas. We originally asked for a list of these projects in our WIC 16 letter⁶³.
- The treatment of expenditure on Quality and Standards I investment projects that had overrun into the Quality and Standards II period. Scottish Water's initial estimate of this overrun was as high as £157 million. Our analysis indicated⁶⁴ that all of the money allocated to Quality and Standards I had been spent and there was therefore no reason why additional funding for Quality and Standards I projects should be made available. In our view customers should not be asked to pay twice for the same output.

The substitution process

The steering group agreed the high level principles of the substitution process in July 2003. These included stakeholder agreement to changes and a requirement that we should scrutinise the project costs associated with all changes to the WIC 18 list. The Reporter for Scottish Water helps with this process. There was also an agreement that any substitutions should not alter the stated objectives of Quality and Standards II.

In September 2004 the steering group agreed a solution to the £103 million of spend to save expenditure included in the original WIC 18. This agreement allowed £58.12 million of the £103 million to be allocated to projects where the scope of the project had changed or problems had arisen. The remainder was allowed to offset any Quality and Standards I liabilities inherited by Scottish Water. Scottish Water has agreed to make no further claims for spending on Quality and Standards I projects⁶⁵.

Stakeholders have also now identified potential projects to satisfy the WIC 16 criteria⁶⁶.

Scottish Water has issued a series of WIC 18 baseline project lists in an agreed format. The stakeholder group examines the list of projects to ensure that all of the agreed outputs of Quality and Standards II are met. There has now been a number of iterations and the WIC 18 list is, in the main, fully defined. It is important to note that the majority of projects in the original responses of the three authorities to the WIC 18 letter are still in the revised baseline.

Scottish Water has sought to argue that non-delivery of Quality and Standards II results from delays in defining the project list. However, this is invalid because most of the additional definitions have related to capital maintenance investment and to the high level programme that was supplied by the former East of Scotland Water Authority. Customers will rightly expect Scottish Water to have taken all possible steps to ensure that the investment programme is delivered efficiently and effectively.

We are still concerned about the length of time taken to define the baseline investment programme for Quality and Standards II. Customers, and the wider group of stakeholders, would benefit if future Quality and Standards investment programmes were fully defined

⁶³ This letter is published in Appendix 10.

⁶⁴ See our 'Investment and Asset Management Report 2000-02', Chapter 5, Section 5.2, Page 24.

⁶⁵ Scottish Water has however again raised this issue in its explanation of the resources required to complete the delivery of Quality and Standards II. See Chapter 6 for more details.

Regulatory letter WIC 16, 'Development constraints and rural sewerage connections', 28 May 2001.

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before the start of the regulatory control period. This would ensure that stakeholders' expectations are met and that we can monitor delivery of the investment programme effectively.

Additional outputs required under Quality and Standards II

Scottish Water notified the steering group that it had been tasked with delivering additional outputs that were not known when the original investment programme was established. In particular, Scottish Water identified the following areas:

· Additional security measures

Scottish Water has indicated that increased government security requirements have increased the investment it will have to deliver during Quality and Standards II.

Unbudgeted development contributions

Scottish Water claims there is a shortfall between the funding provided in Quality and Standards II for 'reasonable cost' contributions to developers⁶⁷ and its current estimated liabilities in this area.

 Dangerous Substances and Explosive Atmospheres Regulations 2002

Scottish Water has indicated that it will incur significant costs associated with the requirements of these regulations. Quality and Standards II did not anticipate these requirements.

Scottish Water has estimated that the total cost of these additional outputs is £110 million.

We have agreed that Scottish Water will provide a detailed report on these costs at the end of the Quality and Standards II period. We will ask the Reporter to assess whether Scottish Water's spending to meet these requirements has been reasonable and efficient. The Scottish Executive has made public expenditure available to cover these additional outputs.

Delivery of Quality and Standards II

In response to the capital efficiency targets set in the Strategic Review of Charges 2002-06, Scottish Water decided to establish Scottish Water Solutions. Scottish Water Solutions is a joint venture company. Scottish Water owns 51% and the remaining 49% is split equally between two consortia, Stirling Water (comprising Thames Water, construction group KBR, Alfred McAlpine and MJ Gleeson) and UUGM (which is made up of United Utilities, Galliford Try and Morgan).

Scottish Water expects that Scottish Water Solutions will deliver two-thirds of the Quality and Standards II capital investment programme. The joint venture is considered key to the overall delivery of Quality and Standards II. However, Scottish Water is still accountable for delivery of the investment programme.

Scottish Water has cited the delays associated with establishing Scottish Water Solutions as a principal reason for its slow start in delivering Quality and Standards II. In our Investment and Asset Management Report 2002-03, published in April 2004, we noted that halfway through the regulatory control period only around £600 million of the £1.8 billion Quality and Standards II programme had been delivered. Further, our analysis showed that only some 10% of the projects had been completed to beneficial use. We commented that⁶⁸:

"Delivery of the Quality and Standards II investment programme is off to a slow start. This delay will impact on much needed improvements to water quality, environmental standards and customer service."

Phasing delivery of the investment programme towards the back end of the regulatory control period does not, in itself, jeopardise delivery of the overall investment programme. However, the longer projects are delayed, the harder it becomes to deliver the programme efficiently. Our 2004 Investment and Asset Management Report commented⁶⁹:

⁶⁷ These 'reasonable cost' contributions are provided by Scottish Water to developers as a contribution towards the cost of installing water and waste water infrastructure to new properties.

Investment and Asset Management Report 2002-03, published by WICS, Executive Summary, Page 10.

⁶⁹ Investment and Asset Management Report 2002-03, published by WICS, Chapter 5, Section 5.7, Page 31.

"It will be a significant challenge to deliver investment efficiently at such an accelerated rate only two companies south of the border have ever increased investment at a similar rate and no company has successfully increased actual capital spending by the cash amount required."

We return to this issue in Chapter 6.

Summary

The second Quality and Standards process covered the regulatory control period 2002-06. The three water authorities estimated the cost of the investment programme to be £2.34 billion.

In the Strategic Review of Charges 2002-06 we advised Ministers that there was significant scope for efficiency and that Scottish Water should be expected to deliver the programme for £1.81 billion.

Over the past three years we have worked with the Scottish Executive, SEPA and the DWQR to finalise the baseline investment programme for Quality and Standards II. We have taken steps to ensure that a detailed baseline investment programme is in place for the next regulatory control period.

Section 2: Capital expenditure

Chapter 4: Delivery of Quality and Standards II

Introduction

In the Strategic Review of Charges 2002-06, we allowed £1.81 billion to deliver Quality and Standards II. However, capital investment inflation has run at a higher level than predicted and we now calculate that the efficient cost of Quality and Standards II is approximately £1.93 billion.

New outputs, relating to security, the removal of hazardous substances and unexpected contributions to developers, may have further increased the efficient cost of the programme to £2.04 billion.

In this chapter we review Scottish Water's performance in delivering this investment. Our analysis of capital programmes south of the border suggests that delivering Quality and Standards II was a significant challenge. The extent of this challenge was not fully appreciated by the three authorities at the time of the Strategic Review of Charges 2002-06. We discuss the impact of the size of the capital programme on the efficiency of programme delivery.

We then examine the overall efficiency of delivering the Quality and Standards II programme to date. We compare current performance with the targets set in the Strategic Review of Charges 2002-06. Our analysis indicates that delivery of Quality and Standards II is currently some £80 million less efficient than was required by the Strategic Review of Charges 2002-06. This inefficiency will increase the challenge posed in delivering the rest of the programme within the originally agreed budget.

Finally, we examine the comparative efficiency of different delivery options used by Scottish Water. This would appear to indicate that Scottish Water Solutions (SWS) has improved the efficiency with which capital investment is delivered. However, as we highlight in Chapter 14, there is still considerable scope for improvement in the efficiency of capital expenditure.

Size of the capital programme

Analysis of the investment programmes delivered by the companies in England and Wales demonstrates the challenge posed in delivering the Quality and Standards II programme. Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger, while Anglian Water and Yorkshire Water are similar in size to Scottish Water. We can compare the size of the Quality and Standards II investment programme with investment programmes delivered by these companies.

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Table 4.1: Key company statistics⁷⁰

Company		WA	ΓER		SEWERAGE					
	Connected properties (millions)	Population (millions)	Length of mains (km)	Number of treatment works	Connected properties (millions)	Population (millions)	Length of sewers (km)	Number of treatment works		
Thames	3.49	8.26	31,416	97	5.38	13.06	67,335	349		
Severn Trent	3.30	7.31	45,949	172	3.71	8.87	54,040	1,017		
United Utilities	3.13	6.69	40,741	140	3.07	6.66	40,018	599		
Scottish Water	2.48	5.18	46,508	371	2.37	4.69	44,854	1,836		
Yorkshire	2.12	4.66	31,217	81	2.12	4.65	30,157	614		
Anglian	1.93	4.18	36,762	143	2.47	5.70	35,394	1,077		

We have examined the capital investment delivered by all of the companies over the 12 consecutive four-year periods from privatisation in 1989 until 2005. We have adjusted the value of each programme to a 2003-04 price base.

Table 4.2: Four-year total capital investment in England and Wales 1990-2005⁷¹

Company	1990-94	1991-95	1992-96	1993-97	1994-98	1995-99	1996-00	1997-01	1998-02	1999-03	2000-04	2001-05
Anglian	£1,829m	£1,856m	£1,722m	£1,676.9m	£1,599.5m	£1,574.3m	£1,600.5m	£1,465.3m	£1,315.2m	£1,199.6m	£1,105.4m	£1,132.2m
Dwr Cymru	£981.0m	£998.9m	£1,009.4m	£1,043.9m	£1,129.2m	£1,197.3m	£1,205.8m	£1,126.4m	£1,021.7m	£984.7m	£977.8m	£1,000.3m
Northumbrian	£523.6m	£482.3m	£470.7m	£525.6m	£705.9m	£815.9m	£958.1m	£989.9m	£905.7m	£912.3m	£831.8m	£762.7m
Severn Trent	£2,773.1m	£2,751.5m	£2,336.0m	£2,131.1m	£2,120.4m	£2,211.9m	£2,358.6m	£2,129.7m	£1893.7m	£1,688.4m	£1,521.4m	£1,625.6m
South West	£944.8m	£975.3m	£870.7m	£789.8m	£713.5m	£631.1m	£645.6m	£618.2m	£604.1m	£673.5m	£666.1m	£660.7m
Southern	£749.6m	£759.9m	£713.3m	£787.5m	£918.6m	£1,099.8m	£1,295.4m	£1,380.1m	£1,306.9m	£1,156.6m	£981.9m	£911.3m
Thames	£2,200.9m	£2,031.4m	£1,912.3m	£1,907.0m	£1,982.6m	£2,132.2m	£2,197.6m	£2,049.1m	£1,915.9m	£1,911.5m	£1,992.1m	£2091.0m
United Utilities	£2439.0m	£2,331.2m	£2,174.3m	£2,133.1m	£2,160.4m	£2,274.3m	£2,270.7m	£2,070.9m	£1,927.6m	£1,953.3m	£2,286.3m	£2,554.1m
Wessex	£645.7m	£623.6m	£543.5m	£487.0m	£484.8m	£530.2m	£575.4m	£595.0m	£594.9m	£608.5m	£631.5m	£663.0m
Yorkshire	£1,411.5m	£1,294.5m	£1,183.4m	£1,207.3m	£1,322.4m	£1,517.4m	£1,727.1m	£1,584.4m	£1,522.1m	£1,425.3m	£1,231.8m	£1,271.6m

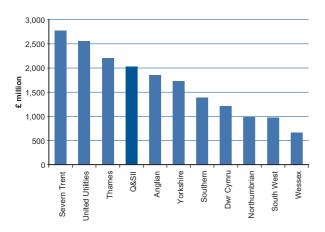
A comparison of the largest ever four-year programme for each of the English and Welsh companies and Quality and Standards II⁷², shows that only three companies have achieved a larger four-year investment programme.

⁷⁰ Information for 2003-04 taken from the Ofwat June Return for companies in England and Wales and from the WIC Annual Return for Scottish Water.

⁷¹ All values have been adjusted to 2003-04 prices. Future forecasts are based on Ofwat's final determination for the 2005-10 price review period.

^{72 £2,026} million in 2003-04 prices, including an estimate for capital inflation and Scottish Water's claim for new outputs.

Figure 4.1: Largest four-year investment total for each company (1990-2005)

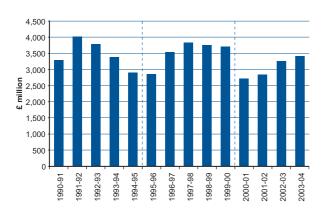


As Figure 4.1 illustrates, only the three biggest companies south of the border have delivered larger investment programmes than Quality and Standards II. Anglian Water and Yorkshire Water, the two companies of similar size to Scottish Water, have never delivered a four-year programme as large as Quality and Standards II.

Impact of the length of the regulatory control period on investment

In England and Wales regulatory control periods last five years. Companies use the first part of a regulatory control period to decide how best to deliver the agreed capital programme. An analysis of total investment since 1990 shows the effect of the regulatory control period on the delivery of investment. This is illustrated in Figure 4.2.

Figure 4.2: Total capital investment of the water and sewerage companies 1990-91 to 2003-04



This analysis clearly shows that the level of investment in the first year of each regulatory control period (1990-91, 1995-96 and 2000-01) is generally lower than in subsequent years of the period. The shorter four-year regulatory control period in Scotland therefore further increased the challenge in delivering Quality and Standards II.

Efficiency in delivering Quality and Standards II

Our assessment of Scottish Water's capital investment efficiency for Quality and Standards II uses the WIC 18 baseline. Any expenditure on projects that are not part of the agreed Quality and Standards II baseline is, by definition, inefficient. Such expenditure does not contribute to the agreed outputs.

We have compared the project expenditure reported by Scottish Water in its quarterly 'Capital Investment Return' (CIR) with the WIC 18 baseline. We examined projects that had been completed to 'beneficial use' from the most recent CIR⁷³. When a project has reached beneficial use, the required output has been delivered, although further costs may still be incurred.

Of the 4,772 projects listed in the latest CIR, 2,338 (49%) are said to have been completed to beneficial use. Of these, 1,936 projects were included in the WIC 18 baseline investment programme. We also included the Scottish Water Solutions incentive⁷⁴ expenditure of around £13 million.

These projects have a WIC 18 pre-efficiency value of around £492 million. We adjusted the WIC 18 pre-efficiency value of each project to take account of higher than expected inflation. We then reduced the pre-efficiency value by the efficiency targets outlined in the Strategic Review of Charges 2002-06⁷⁵. Table 4.3 shows these adjustments.

⁷³ In this chapter we have used the Capital Investment Return for quarter 3 - 2004-05, which was supplied to our Office in January 2005. The quarter 4 - 2004-05 CIR was received in May 2005, too late to be included in this document. Our initial analysis of the quarter 4 CIR has, however, confirmed that it does not impact to any significant extent on our findings.

Project Autocode 9809 labelled 'Scottish Water Solutions Share account'.

⁷⁵ See Strategic Review of Charges 2002-06, Section 4, Chapter 19.

Table 4.3: Inflation and efficiency adjustments applied to projects completed to beneficial use

Financial year	Strategic Review of Charges 2002- 06 forecasted COPI Index	COPI real and forecasted	Inflation adjustment	Efficiency target
Pre 2002	124.41	128.22	3.07%	14.0%
2002-03	124.41	128.22	3.07%	14.0%
2003-04	126.27	135.25	7.11%	19.9%
2004-05	128.17	141.56	10.45%	25.3%
2005-06	130.09	145.73	12.03%	30.8%
Post 2006	130.09	145.73	12.03%	30.8%

We compared the adjusted post-efficiency value for each project completed to beneficial use with the actual spend reported in the CIR, as shown in Table 4.4.

Table 4.4: Assessment of efficiency for projects completed to beneficial use

Number of projects	1,936
WIC18 pre-efficiency value	£ 492.4m
Inflation adjustment	£ 39.4m
Adjusted pre-efficiency	£ 531.8m
Efficiency target	£ 114.7m
WIC18 post efficiency value	£ 417.1m
Actual spent to date	£ 497.5m
Overspent	£80.3m
% overspent	19.3%

This shows that there has been an overspend of around £80.3 million on projects completed to beneficial use. This represents a 19.3% inefficiency in delivery of the programme. Indeed, actual expenditure on these completed projects is greater than their original projected pre-efficiency cost. This level of inefficiency in the early part of the Quality and Standards II programme, when the efficiency targets were lower, significantly increases the efficiency required for the remainder of Quality and Standards II.

Scottish Water has indicated that Scottish Water Solutions will out-perform the efficiency targets set in the last Strategic Review. In the next section we examine the relative efficiency of the different delivery options used by Scottish Water in delivering Quality and Standards II.

Importance of the delivery method

In its quarterly CIR submissions, Scottish Water allocates each project to one of the following three categories:

Scottish Water project

Projects which have been, or are being, delivered entirely by Scottish Water. In general, these appear to pre-date the formation of Scottish Water Solutions in September 2003. Some smaller projects continue to be delivered by Scottish Water.

Scottish Water Solutions allocated

These are projects that have been allocated to Scottish Water Solutions. Scottish Water Solutions is responsible for all aspects of the work, including strategic planning. Scottish Water hopes that using Scottish Water Solutions in this way will help identify better ways to deliver the required outputs.

Scottish Water Solutions managed

These are projects that were started by Scottish Water but where responsibility for management and delivery has now been passed to Scottish Water Solutions.

We repeated our efficiency analysis for each of these three categories. The results are shown in Table 4.5.

Table 4.5: Efficiency analysis for projects delivered through different procurement routes

Accountability	Number of projects	WIC18 post efficiency value	Actual spent to date	Over / underspent	% over / underspent
Scottish Water Project	1,348	£158.6 m	£213.7m	£55.1m	34.7%
SWS Allocated	479	£149.8m	£110.0m	-£39.8m	-26.6%
SWS Managed	109	£108.8m	£173.8 m	£65.1 m	59.8%
	1,936	£417.1m	£497.5m	£80.3 m	19.3%

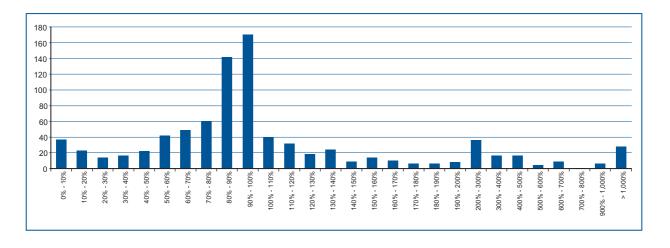
This analysis suggests that the projects allocated to Scottish Water Solutions have been delivered the most efficiently, and the projects managed by Scottish Water Solutions have been least efficient.

The low efficiency of the Scottish Water Solutions managed projects may reflect 'damage limitation', ie projects may have been allocated to Scottish Water Solutions in order to limit the extent of overspend.

The distribution of differences between the actual level of spending and the post-efficiency values for this group of projects may support such a hypothesis. We illustrate the distribution of differences in Figures 4.3 to 4.6 for each of the three delivery options. Any percentage greater than 100% is an overspend and any figure less than 100% is a saving⁷⁶.

The analysis also takes account of the different sizes of the projects. It is better to save £5,000 on a £10,000 project than the same amount on a £100,000 project.

Figure 4.3: Scottish Water projects: actual as a percentage of pro-rata post-efficiency value

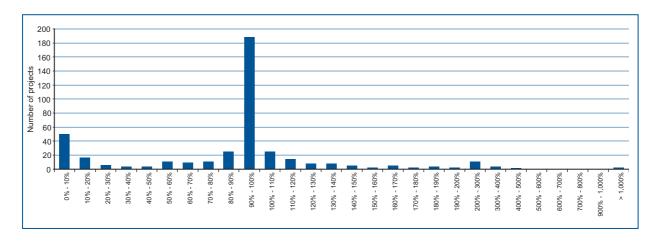


Most of the Scottish Water projects have been delivered for between 80% and 100% of their post-efficiency value. However, a large number of projects have exceeded their post-efficiency value by a significant percentage.

Figure 4.4 shows the same analysis for those projects allocated to Scottish Water Solutions.

We used 1,374 projects in this analysis. 562 projects were excluded as they had zero or negative pre-efficiency or spend to date, so could not easily be used as a comparison.

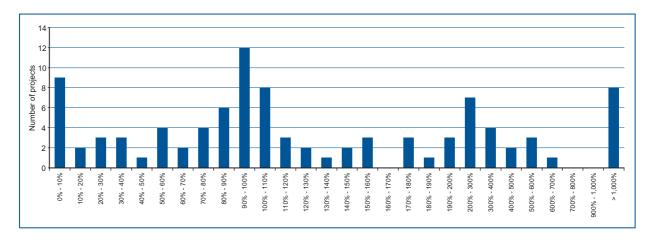
Figure 4.4: Scottish Water Solutions allocated: actual as a percentage of the post-efficiency value



Most of the Scottish Water Solutions allocated projects have been delivered for 90% to 100% of their post-efficiency value. Fewer projects have been delivered for more than 100% of their post-efficiency value. This may suggest that Scottish Water Solutions is bringing a better focus to cost control and meeting budgets.

Figure 4.5 repeats the analysis for the Scottish Water Solutions managed projects.

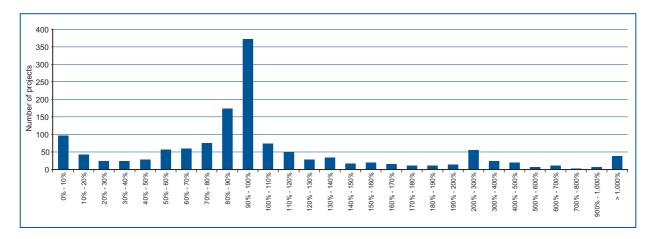
Figure 4.5: Scottish Water Solutions managed projects: actual as a percentage of the post-efficiency values



This analysis shows that the Scottish Water Solutions managed projects have often overspent their post-efficiency budget significantly.

Figure 4.6 illustrates the overall picture.

Figure 4.6: All beneficial use projects: actual as a percentage of the post-efficiency value



Overall, this analysis would suggest the following:

- The majority of projects are being delivered to the post-efficiency budget set in the Strategic Review of Charges 2002-06. This suggests that the targets were achievable.
- Overall performance is being adversely affected by a relatively small number of projects that are coming in well over budget.
- Cost control for projects that are wholly delivered by Scottish Water Solutions appears to be better.
- Inefficiency in delivering the initial phase of Quality and Standards II will impact on the challenge that Scottish Water and Scottish Water Solutions face in delivering the rest of the programme to budget.
- Projects which, in the later stages, have been passed to Scottish Water Solutions to manage have performed least well. Post-project appraisal of these projects is required to find out what went wrong.

The impact of inefficiency on stakeholders

It is important to recognise the impact that inefficient delivery of the investment programme will have on customers and other stakeholders.

Scottish Water has a fixed amount of funding available to deliver the Quality and Standards II investment programme. Inefficient spending consumes resources that were intended for other projects. This could potentially delay improvements in water quality, environmental performance and customer service unless future projects are delivered below their post-efficiency costs.

The Strategic Review of Charges 2002-06 set an average efficiency target of around 23% for delivery of the Quality and Standards II programme. The original set of WIC 18 baseline projects totalled £2,340 million (preefficiency). Scottish Water was tasked with delivering Quality and Standards II for £1,802 million (£2,340 million x 77% = £1,802 million). If Scottish Water achieved only an 18% improvement in efficiency across the whole programme, delivery of the programme would cost £1,919 million.

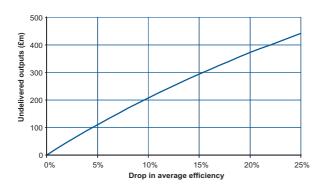
This level of improvement in efficiency would mean that only 94% of the programme could be delivered within the budget available and that outputs worth £110 million would not have been delivered. The relationship between inefficiency and undelivered outputs is illustrated in Table 4.6. Even a single percentage point failure to meet the efficiency target has a significant effect on the outputs that would be undelivered at the end of the regulatory control period.

Table 4.6: Relationship between efficiency and output delivery

Shortfall from targeted efficiency	Average efficiency	Actual	Overspend required to deliver all outputs	% required overspend	Delivered outputs	Percentage of outputs delivered	Undelivered outputs
0%	23%	£1,802m	£0m	0.0%	£1,802m	100.0%	£0m
3%	20%	£1,872m	£70m	3.9%	£1,734m	96.3%	£68m
6%	17%	£1,942m	£140m	7.8%	£1,672m	92.8%	£130m
9%	14%	£2,012m	£211m	11.7%	£1,613m	89.5%	£189m
12%	11%	£2,083m	£281m	15.6%	£1,559m	86.5%	£243m
15%	8%	£2,153m	£351m	19.5%	£1,508m	83.7%	£294m
18%	5%	£2,223m	£421m	23.4%	£1,460m	81.1%	£341m
21%	2%	£2,293m	£491m	27.3%	£1,416m	78.6%	£386m
24%	-1%	£2,363m	£562m	31.2%	£1,374m	76.2%	£428m

Figure 4.7 shows the same analysis in graph form.

Figure 4.7: Relationship between efficiency and output delivery



improvements in its capital expenditure efficiency.

Our analysis shows that, to date, Scottish Water lags behind the efficiency profile set in the Strategic Review of Charges 2002-06 by £80.3 million. However, the projects allocated to Scottish Water Solutions have, to date, achieved the efficiency targets set out in the last Strategic Review.

Inefficiency will tend to delay the delivery of outputs. This is clearly not in the interests of customers or other stakeholders.

We currently estimate⁷⁷ that £1,838 million of Quality and Standards II will have been spent by March 2006. We estimate that outputs with a value of around £253 million⁷⁸ will still need to be delivered. We return to the impact of any overhang of projects into the next regulatory control period in Chapter 6. Scottish Water has claimed that it needs £283 million to complete Quality and Standards II.

Summary

The Quality and Standards II investment programme was larger than any four- year programme that has been delivered by companies of a similar size to Scottish Water. Scottish Water has also had to make significant

⁷⁷ From information in Scottish Water's CIR for Quarter 3 2004-05.

⁷⁸ See Chapter 6.

Section 2: Capital expenditure Chapter 5: Quality and Standards III

Introduction

The Quality and Standards III process established the investment priorities for the water industry in Scotland for the period 2006 to 2014. Scotlish Ministers set the priorities for the 2006-10 regulatory control period.

The chapter includes an overview of the key stages in Quality and Standards III. The process began with initial consultations with stakeholders about their views on investment priorities, and ended with publication of Ministerial Guidance and Scottish Water's second draft business plan. In this chapter we discuss the consultation and the content of the guidance, then examine whether the investment programme that Scottish Water set out in its second draft business plan is consistent with the guidance.

Development of Quality and Standards III

Many stakeholders appear not to have appreciated that the investment objectives for the industry for four years would be fixed by the Quality and Standards II process. Establishing a clear baseline for the 2002-06 regulatory control period reduced the scope for responding to new priorities.

The Scottish Executive regarded the establishment of a clear baseline for investment as essential and therefore took steps to make sure that a wide range of stakeholders were engaged at an early stage of the Quality and Standards III process. The Executive set up a project board which had overall responsibility for developing the options to be included in the Quality and Standards III consultation.

The following stakeholders were represented on the board:

- Communities Scotland;
- Confederation of British Industry (Scotland);
- Convention of Scottish Local Authorities and local authorities:

- Drinking Water Quality Regulator (DWQR);
- Historic Scotland;
- · Homes for Scotland;
- Scottish Consumer Council;
- Scottish Environment Protection Agency (SEPA);
- Scottish Executive Departments;
- Scottish Federation of Housing Associations;
- Scottish National Heritage;
- Scottish Water;
- Water Customer Consultation Panels: and
- Water Industry Commissioner for Scotland.

Detailed work in defining the required investment was delegated to a number of specialist groups, each of which had particular responsibility for a specific work package. These work packages included:

- maintenance;
- growth in the water and sewerage networks;
- environmental improvements;
- · drinking water quality; and
- other important issues for customers.

Each work package identified investment 'drivers'. In most cases, the driver of a need for investment was legislation. A number of scenarios were then drawn up, ranging from 'do nothing' to 'aspirational' improvement. The performance of Scottish Water's assets relative to the identified investment drivers at the end of the Quality and Standards II investment programme was also assessed.

Scottish Water was then asked to cost the gap between the expected position at the end of Quality and Standards II and each of the identified scenarios. The specialist groups responsible for work packages each submitted an interim report to the project board in April and May of 2004. These reports were used by the Scottish Executive to inform the Quality and Standards III consultation. It is important to highlight that only Scottish Water was involved in costing the required outputs.

The 'Investing in Water Services' consultation

'Investing in Water Services 2006-14 (The Quality and Standards III project)' set out the Scottish Executive's views on the likely costs of different levels and types of investment. The information was based on the costings for the required investment which Scottish Water had provided.

The consultation sought views on investment priorities and on whether or not bills should rise to pay for each type of investment. Responses to the consultation were used by the Scottish Executive to inform their February Guidance.

Principles

The consultation began by identifying the principles that would be applied when the Executive determined the investment programme that Scottish Water is required to deliver:

- Cost-effective an investment programme that is founded on a proper assessment of investment needs for the industry and one that addresses these requirements in the most cost-effective way.
- Affordable the Executive recognises that there is a need to limit the scale of increases in charges to a level that customers think is fair.
- Deliverable this means limiting the size of the investment programme to ensure that it is possible to deliver it. Constraints on the size of the programme include civil engineering capacity, Scottish Water's

ability to deliver investment efficiently and the level of disruption that communities can tolerate, for example, from roads being dug up.

 Sustainable – by this the Executive means a programme that delivers environmental improvements at a cost and pace that is fair and equitable for current and future generations.

The Executive invited stakeholders to comment on these principles.

Establishing future investment needs

The consultation document was based on interim reports from each of the work package groups. The Executive recognised that further detailed work was required to refine costs, assess risks and benefits, and pull investment requirements into an overall investment programme.

The Executive listed the following questions which it expected the work package groups to address to ensure that investment would be carried out at minimum cost to customers.

- Is it legitimate for customers alone to pay for the investment under consideration?
- Is the proposed investment option the most costeffective available?
- Are the planning assumptions that lie behind the requirement reasonable?
- Is there any flexibility built into the requirement (either to meet a lower standard of compliance in the regulatory control period or to invest over a longer period), and, if not, should there be?
- What level of priority should be attached to the individual investment requirements?

The Executive then asked if these were the correct questions that each work package group should use to assess each individual investment.

Maintaining the current level of service to customers

The 'Investing in Water Services' consultation outlined the different approaches to assessing the appropriate level of investment in maintenance and suggested that a 'serviceability' approach should be used. The serviceability approach involves identifying levels of service to customers then determining how much it would cost to maintain this level of service over the period.

The consultation invited stakeholders' views on the importance of maintaining serviceability levels during Quality and Standards III. The Executive also sought views on which serviceability measures were most important; and, if it was appropriate to invest further in improving these measures, whether this should be funded from higher charges or by reduced investment in other areas.

Growth in the public water and sewerage networks

The 'Investing in Water Services' consultation split investment in growth into two categories: new development and first-time connection.

New business and housing developments create a demand for investment to connect to the public water and sewerage network. During the development of Quality and Standards III, Scottish Water asked local authorities to project the level of new housing development between 2006 and 2014. The 32 local authorities estimated that around 230,000 new houses would be built.

The Scottish Executive's estimate was much lower. It estimated that housing numbers might grow by around 15,000 per year, or a total of 120,000 over the 2006-14 period.

Scottish Water estimated that the cost of connecting 230,000 houses to the public water and sewerage network would be around £1 billion over the eight-year period. To some extent this cost would be met by a new charging regime for connections to the network.

The Scottish Executive indicated that it intended to include a provision within the investment programme to fund deep connection costs⁷⁹. This was confirmed in the February Ministerial Guidance.

First-time connections occur when customers who previously had private water and/or sewerage services are connected to the public network. Scottish Water is only required to do this when the costs involved are deemed 'reasonable'.

Three of the work package groups (environmental, drinking water, and extending public water and sewerage networks) examined this issue. Based on costs from Scottish Water, they concluded that first-time water provision could cost some £200 million over the eight-year period and that first-time waste water provision could cost around £600 million over the eight years. None of these properties could be connected at reasonable cost. The work package group that examined environmental issues identified £260 million (again, based on Scottish Water's costing) of priority first-time provision which they believed would deliver important environmental benefits.

The Executive sought views on whether or not properties should be connected at beyond reasonable cost. It also asked whether, if an amount for first-time provision were included within the investment programme, it should be paid for by higher charges or lower investment elsewhere.

Environmental improvements

'Investing in Water Services' recognised that there will need to be significant investment in Scotland's aquatic environment well beyond 2014. The work package group identified more than 30 separate legal drivers of investment. Many of these drivers relate to European Union Directives.

The consultation included Scottish Water's estimate that £2.5 billion was required to ensure that it would meet mandatory standards. Scottish Water also estimated that a further £500 million would be required to demonstrate progress towards the guideline standards.

⁷⁹ Deeper elements of connection or 'deep' reinforcement relate to the elements of the network that are remote from the connection point but may still require uprating, eg developing water resources (including bulk mains and treatment plants), or increasing the capacity of sewage treatment works.

The Executive asked stakeholders what they believed the top environmental priorities should be. In addition, it asked whether stakeholders believed that additional environmental investment should be paid for through higher charges or through lower investment in other areas.

Drinking water quality and water resources

The water quality work package group identified that significant investment was required to remove harmful substances, such as trihalomethanes and lead, from the water supply. In practice there can be a difference between regulatory standards (required by the DWQR) and legal standards (required by law).

'Investing in Water Services' suggested that around £1.65 billion would allow Scottish Water to reach the regulatory minimum position by 2010. Around £30 million of this is due to regulatory standards being higher than legal standards.

The Scottish Executive sought views on the priorities for investment in drinking water and water resources. It also asked whether stakeholders believed that additional investment in drinking water should be paid for through higher charges or through lower investment in other areas.

Other priorities for customers

The consultation identified the following high priority customer issues:

- odour from waste water treatment works;
- water pressure; and
- sewer flooding.

Odour

Odour from waste water treatment works is becoming a higher profile issue for customers. This could either be because of a growing intolerance of odour or because housing is encroaching upon waste water treatment works. Current legislation⁸⁰ prevents waste water treatment works emitting an odour that could be considered a 'statutory nuisance'. Additionally, a few waste water treatment works are issued with odour consents by SEPA as part of the Integrated Pollution Prevention and Control regime⁸¹.

The costs of reducing odour problems were not included within the consultation. The Scottish Executive has only recently issued a Code of Practice relating to odour. Nonetheless, the Executive sought views on whether investment to reduce odour should form part of the investment programme. It also asked customers to consider whether this should be paid for through higher charges or lower investment elsewhere.

Water pressure

Low water pressure can mean that some household appliances cannot be used. Scottish Water expects there to be 14,942 properties on its low water pressure register at the end of the Quality and Standards II programme. It estimates that it could remove 13,365 properties from this register, at a cost of £40 million. The consultation sought views on whether poor pressure should be included in the investment programme and, if so, whether this should be paid for from higher charges or lower investment elsewhere.

Sewer flooding

Sewer flooding is a relatively rare occurrence. However, when it does happen it is distressing and unpleasant for those customers affected. The consultation estimated that an additional £240 million would remove around 2,301 properties from the 'at risk' register⁸².

Our response to 'Investing in Water Services'

Our response to the 'Investing in Water Services' consultation recognised that customers are not likely to agree fully on priorities and that our principal role is to ensure that customers receive the best possible value for money, on a sustainable basis.

⁸⁰ The Environment Protection Act 1990.

⁸¹ The Integrated Pollution Prevention and Control regime is European Directive 96/61/EC which was enacted into UK law with the Pollution Prevention and Control Act 1999.

⁸² A register kept by Scottish Water of those properties that are deemed to be at risk of suffering a sewer flooding incident with a defined frequency.

Principles

We agreed with the four guiding principles outlined by the Scottish Executive for Quality and Standards III. Our main concern was that the investment programme should be properly defined, the inputs and the outputs measurable, and that the investment programme should be placed in the public domain. We believed that these steps were important to ensure that:

- stakeholders have a common understanding of what is included within the investment programme;
- customers' expectations can be met; and
- delivery of the Quality & Standards III investment programme can be monitored effectively.

Establishing future investment needs

We were pleased that the Executive identified important questions for further work to understand investment needs. Our view was that two additional questions needed to be asked:

- Is the investment defined at an asset level?
- Is all of the investment at each asset level understood so that the risk of overlap is minimised?

These questions were important as it may have been necessary to prioritise projects to ensure that the programme was deliverable. Defining the programme clearly should reduce the need for discussions about the content of the programme at a later date.

Maintaining service standards

We believe that the investment priority for Scottish Water should be to maintain the assets appropriately. The sustainability of the water industry in Scotland and its ability to deliver environmental, public health and customer service improvements depend on adequate maintenance on an ongoing basis. It is important that the outputs of capital maintenance are specified clearly and in detail. Wherever possible this should be at an asset level.

Growth in the public water and sewerage networks

We welcomed the proposal to charge developers for connections to the public water and sewerage network. We believe that this should ensure that the highest priority development constraints are identified and resolved.

We also believe that a well-managed water and sewerage company, with a good knowledge of its assets, should be able to provide clear and detailed information about areas that are open for development to local authorities. We suggest that a map should be made available, highlighting those areas where development can be accommodated without any significant investment from Scottish Water.

Investing in the environment, drinking water quality and water resources

We indicated that if the costings were correct customers would not be able to afford to deliver all of the desired investment requirements. In this case, we said that Ministers would need to balance:

- what customers say they want; and
- what customers 'ought to want'.

Customer preferences could be gleaned from market research and from responses to the consultation. It was important that Ministers listened carefully to these preferences. However, it was also important to recognise the expertise of the DWQR and SEPA and their understanding of important public health and environmental compliance issues.

We made it clear that it was not our role to comment on the level and type of quality investment. However, we did make it clear that any such investment should be clearly defined at an asset level and should take full account of the capital maintenance investment.

Other priorities for customers

We believed that market research and the responses to the consultation should allow Ministers to take decisions about the appropriate level of investment in these areas. From a regulatory standpoint, the most important issue is that investment inputs and outputs are properly defined so that we can monitor the delivery of benefits to customers.

Scottish Water's first draft business plan (October 2004)

At the end of June 2004, we provided Scottish Water with detailed guidance to assist them in completing their first draft business plan. The business plan is an important opportunity for Scottish Water to set out its business strategy for the 2006-10 regulatory control period. We expected Scottish Water to highlight any factors which it considered we needed to take into account in setting maximum levels of charges.

Scottish Water submitted its first draft business plan on 29 October 2004. The plan contained its initial investment proposals. We had expected the proposals to take account of Scottish Water's knowledge of the Quality and Standards III process, their assumptions on any likely overhang from Quality and Standards II, and their views on the size of investment programme that could be efficiently managed. We published our response to Scottish Water's first draft business plan in December 2004⁸³.

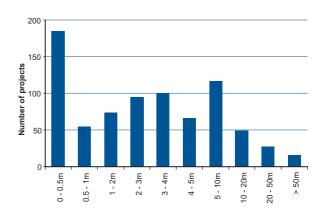
Size of the proposed investment programme

As part of the plan, Scottish Water provided details of its proposed investment programme in the Table C Appendix.⁸⁴ This table lists 790 projects that were planned to be completed over the Quality and Standards III period (2006-14). These projects have a total value of £4,891 million.⁸⁵ Scottish Water proposed to invest £2,199 million of this during the 2006-10 regulatory control period.⁸⁶ This equates to £550 million of

investment per year and represents around £226 each year for every connected property in Scotland.

Figure 5.1 shows the distribution of investment projects for the Quality and Standards III period by size.

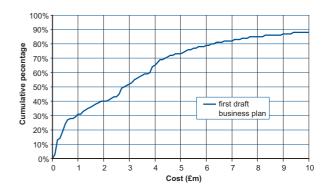
Figure 5.1: Number of projects by size (£)87



This analysis shows that the largest proportion of projects will cost up to £1 million.

As Figure 5.2 shows, more than 75% of the proposed projects will cost less than £6 million.

Figure 5.2: Cumulative percentage of projects with a value of between £0 and £10 million



⁸³ This is available on our website at www.watercommissioner.co.uk

The first draft business plan, including Table C, was completed using 2005-06 prices. The second draft business plan was completed using 2003-04 prices. In order to ensure comparability throughout this chapter, we have unwound Scottish Water's inflation adjustment in the first draft business plan, and reported all investment in 2003-04 prices unless otherwise stated.

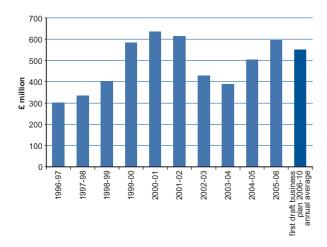
⁸⁵ Of the 790 projects listed in Table C, six had a negative value recorded against them. If these negative values were not taken into account, then the actual cost of the proposed investment programme would be £5.412 million in 2003-04 prices.

⁸⁶ In the main body of the business plan, Scottish Water actually proposed to invest £2,211 million, the equivalent of £553 million for each year of the 2006-10 period, or £229 per property per annum (in 2005-06 prices). This figure does not appear to be consistent with those reported in Table C. We have relied on Table C for the analysis in this section.

⁸⁷ This figure excludes the six projects with a negative value.

This proposed investment programme would have represented a significant delivery challenge. Figure 5.3 shows the level of investment (in 2003-04 prices)⁸⁸ that has been delivered each year since 1996-97. We compared this with the average annual investment of £550 million implied by Scottish Water's proposed total spend of £2.2 billion for the 2006-10 regulatory control period.

Figure 5.3: Total investment per year



Deliverability of the investment programme proposed in the first draft business plan

In the previous chapter we looked at the challenge that was posed by Quality and Standards II. We noted that there are five water and sewerage companies in England and Wales that are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger, while Anglian Water and Yorkshire Water are similar in size to Scottish Water.

Table 5.1 shows the four-year total capital investment in England and Wales in the period 1990-2005. Figure 5.4 shows that Scottish Water's proposed programme for the 2006-10 regulatory control period would be comparable to the biggest programme so far delivered by Thames Water.

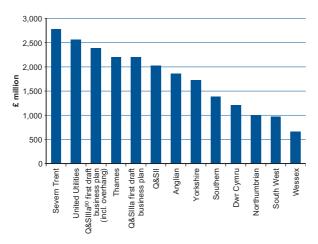
⁸⁸ This is the total cash cost of investment rebased to 2003-04 prices. We have not adjusted values to take account of the relative efficiency of the Scottish water industry in each year.

Section: 2: Capital expenditure Chapter 5: Quality and Standards III

Table 5.1: Four-year total capital investment in England and Wales 1990-2005 89

Company	1990-94	1991-95	1992-96	1993-97	1994-98	1995-99	1996-00	1997-01	1998-02	1999-03	2000-04	2001-05
Anglian	£1,829.0m	£1,856.0m	£1,722.0m	£1,676.9m	£1,599.5m	£1,574.3m	£1,600.5m	£1,465.3m	£1,315.2m	£1,199.6m	£1,105.4m	£1,132.2m
Dwr Cymru	£981.0m	£998.9m	£1,009.4m	£1,043.9m	£1,129.2m	£1,197.3 m	£1,205.8m	£1,126.4m	£1,021.7m	£984.7m	£977.8m	£1,000.3m
Northumbrian	£523.6m	£482.3m	£470.7m	£525.6m	£705.9m	£815.9m	£958.1m	£989.9m	£905.7m	£912.3m	£831.8m	£762.7m
Severn Trent	£2,773.1m	£2,751.5m	£2,336.0m	£2,131.1m	£2,120.4m	£2,211.9m	£2,358.6m	£2,129.7m	£1,893.7m	£1,688.4m	£1,521.4m	£1,625.6m
South West	£944.8m	£975.3m	£870.7m	£789.8m	£713.5m	£631.1m	£645.6m	£618.2m	£604.1m	£673.5m	£666.1m	£660.7m
Southern	£749.6m	£759.9m	£713.3m	£787.5m	£918.6m	£1,099.8 m	£1,295.4m	£1,380.1m	£1,306.9m	£1,156.6m	£981.9m	£911.3m
Thames	£2,200.9m	£2,031.4m	£1,912.3m	£1,907.0m	£1,982.6m	£2,132.2 m	£2,197.6m	£2,049.1m	£1,915.9m	£1,911.5m	£1,992.1m	£2,091.0m
United Utilities	£2,439.0m	£2,331.2m	£2,174.3m	£2,133.1m	£2,160.4m	£2,274.3m	£2,270.7m	£2,070.9m	£1,927.6m	£1,953.3m	£2,286.3m	£2,554.1m
Wessex	£645.7m	£623.6m	£543.5m	£487.0m	£484.8m	£530.2m	£575.4m	£595.0m	£594.9m	£608.5m	£631.5m	£663.0m
Yorkshire	£1,411.5m	£1,294.5m	£1,183.4m	£1,207.3m	£1,322.4m	£1,517.4 m	£1,727.1m	£1,584.4m	£1,522.1m	£1,425.3m	£1,231.8m	£1,271.6m

Figure 5.4: Largest four-year investment total



This shows that the absolute size of the investment programme proposed by Scottish Water is larger than has been delivered by any similar sized company in England and Wales.

Further, the proposed investment programme did not include the expected £183 million⁹¹ overhang from Quality and Standards II. Scottish Water therefore proposed to deliver a £2.38 billion investment programme over four years.

Scottish Water's proposed investment programme was, therefore, almost without precedent in the recent history of the water and sewerage industry in the UK. As shown

in Table 5.2 below, the largest five privatised companies have delivered programmes of more than £2.4 billion on only four occasions, or 6.7% of all of the possible four-year periods. None of these larger investment programmes have been delivered recently.

Table 5.2: Delivery of four-year programmes of more than £1.1 billion by the largest five companies (1990-2005)⁹²

Size	Per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	3.3%
Over £2.5 billion	£625m	3	5.0%
Over £2.4 billion	£600m	4	6.7%
Over £2.3 billion	£575m	7	11.7%
Over £2.2 billion	£550m	12	20.0%
Over £2.1 billion	£525m	20	33.3%
Over £2.0 billion	£500m	24	40.0%
Over £1.9 billion	£475m	32	53.3%
Over £1.8 billion	£450m	35	58.3%
Over £1.7 billion	£425m	37	61.7%
Over £1.6 billion	£400m	41	68.3%
Over £1.5 billion	£375m	47	78.3%
Over £1.4 billion	£350m	50	83.3%
Over £1.3 billion	£325m	52	86.7%
Over £1.2 billion	£300m	56	93.3%
Over £1.1 billion	£275m	60	100.0%

We also analysed the largest investment programmes

⁸⁹ All values have been adjusted to 2003-04 prices. Future forecasts are based on Ofwat's final determination for the 2005-10 price review period.

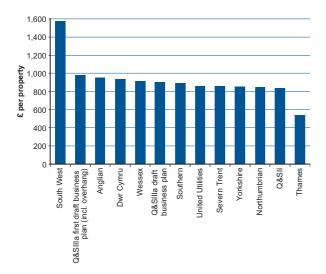
⁹⁰ Q+S IIIa is the first half of Quality and Standards III, i.e. that part which must be delivered in the period 2006-10.

Scottish Water reported a Quality and Standards II overhang of £194 million at 2005-06 prices. This figure includes Quality and Standards II investment to be delivered after March 2006 (£154 million) and new obligations to be delivered post March 2006 (£40 million).

The number of occasions is cumulative. That is to say there were two occasions when a programme of more than £2.6 billion was delivered and one occasion when a programme of £2,5 billion to £2.6 billion was delivered. Accordingly, there were 3 occasions when a programme of more than £2.5 billion was delivered.

achieved by each company on a per connected property basis. We compared the results with the investment programme proposed by Scottish Water (including the Quality and Standards II overhang). Figure 5.5 shows that over a four-year period only one company, South West Water, has achieved a higher level of investment per property. South West Water is a relatively small company that serves the rural area of Devon and Cornwall.

Figure 5.5: Largest four-year investment per property (1990-2005)



Consistency with Quality and Standards III

The Quality and Standards III consultation process was designed to set priorities for investment that were consistent with a broad spectrum of views from stakeholders and customers. The first draft business plan contained a number of projects that did not appear to be consistent with likely Quality and Standards III priorities. They were referred to in the business plan as 'investment in other service areas'. Scottish Water included this investment to target other areas which, on the basis of its market research, were important to customers. Scottish Water's customer research did not seem to be consistent with either the research conducted for the Scottish Executive in 2004 or previous research projects north or south of the border.

The 'investment in other service areas' projects accounted for around £195 million of investment. The projects related to improving water pressure, reducing

internal flooding from overloaded sewers, reducing external flooding by sewage on roads and open spaces, reducing odour from waste water treatment works, and improving customer service.

We also noted that Scottish Water had identified significant investment requirements at PPP sites. This involved 13 projects at a total cost of £185 million during the Quality and Standards III period. A primary driver behind the use of PPP schemes was to transfer risks away from Scottish Water to the PPP operators. We return to this issue in Chapters 8 and 11 of this volume.

Issues with costing the first draft business plan

The Reporter audited Scottish Water's first draft business plan. His views are presented in Chapter 13 of Volume 4 of this draft determination.

We were concerned by his comments about both the cost and the scope of projects in the investment programme. For example, he noted that there was significant over costing of quality enhancement projects at water treatment works because:

- solutions did not fully reflect site conditions;
- the use of minimum sizes did not reflect the generally smaller sizes of projects in Scotland; and
- there was an overlap with capital maintenance projects.

The Reporter also identified areas of capital maintenance expenditure where there were doubts about the cost and scope of projects. For example, he noted that at water treatment works:

- some items had been wrongly identified;
- there had been miscommunication of the necessary scope of the works between those specifying the work and those producing cost estimates; and
- there was overlap between the quality enhancement and capital maintenance expenditure programmes.

The opportunities for synergies between the capital maintenance and quality enhancement programmes which were identified by the Reporter were not unexpected. We had identified in the Quality and Standards III process that the work packages were identifying investment requirements without taking an integrated approach to the investment required at a specific site.

The Reporter discussed his findings with Scottish Water so that it could take account of these issues in its second draft business plan.

Our open letter to Ministers

Following our analysis of Scottish Water's first draft business plan we wrote to the Minister for the Environment and Rural Development, Ross Finnie MSP in December 2004⁹³. In this open letter, we set out our assessment of the general prospects for the outcome of the Review. We also made a number of specific comments relating to the investment programme.

We informed the Minister that the Reporter had identified a number of areas where the cost and scope of projects within Scottish Water's capital programme had been overestimated.

We noted that Scottish Water should be set challenging but achievable objectives. In this regard, we emphasised the importance of defining a capital programme of a size that can be delivered efficiently. Significant capital expenditure to deliver environmental, public health and customer service improvements will be required for the foreseeable future. It is in customers' interests that these improvements are affordable and deliverable.

The letter also noted that Quality and Standards II was itself a substantial investment programme and it seemed increasingly likely that a large proportion of that programme would not be delivered during the current regulatory control period. This limited the opportunity for Quality and Standards III outputs to be delivered in the 2006-10 regulatory control period.

We suggested that we should be cautious about any further significant increase in the size of Scottish Water's capital programme. We cautioned that this actually reduced the outputs delivered by introducing a pressure to spend that could adversely impact on efficiency. The letter explained that the capital programme proposed in Scottish Water's first draft business plan was without precedent and that, in our view, it would be likely to lead to an even larger overhang at the end of the next review period. We noted that a large overhang is not in the interests of customers, the environment or public health.

Finally, we noted that it was essential that the delivery of the Quality and Standards III capital programme was monitored carefully throughout the next regulatory control period. Stakeholders would need to have a detailed, defined list of projects and their outputs. The list should include detailed descriptions of how Scottish Water will deliver the objectives of Quality and Standards III. We undertook to work closely with the DWQR and SEPA to provide regular updates about the progress of capital projects and to confirm that quality outputs had been delivered.

Ministerial Guidance

The Ministerial Guidance⁹⁴ published in February 2005 marked the completion of the Quality and Standards III process. The accompanying statements set out the objectives of the investment programme for Quality and Standards III. They also set out the detailed objectives for the period of the Strategic Review of Charges 2006-10.

The investment objectives in the Ministerial Guidance were divided into two categories: those that are essential and those that are desirable. Ministers have required Scottish Water to be funded to deliver all of the essential objectives for the 2006-10 Strategic Review. The essential objectives that Scottish Water must deliver by 2014 are as follows:

- maintain service standards for customers to the levels forecast for March 2006;
- contribute to improvement in the quality of water in 530 km of water bodies;

⁹³ This letter can be found on our website – www.watercommissioner.co.uk

⁹⁴ We discussed the Ministerial Guidance in more detail in Volume 4, Chapter 14

- improve drinking water quality for 1.5 million people in Scotland;
- provide sufficient strategic capacity to meet the requirements of all estimated new development;
- minimise odour nuisance at 35 waste water treatment works; and
- remove a net 1,140 properties at risk from internal sewer flooding.

These outputs were to be delivered irrespective of their impact on customers' bills.

Ministers also set out the following desirable objectives:

- increase the total length of water bodies improved to 590 km;
- accelerate the removal of lead communication pipes and improvements in the management of a further 11 water resource zones;
- further improve the total length of water bodies improved to 1,270 km;
- improve the water pressure provided to 5,625 properties; and
- secure a net reduction of 850 in the number of properties affected by unplanned interruptions of non-trunk mains, lasting longer than 12 hours.

Ministers required us to include the desirable objectives set out above in the draft determination as long as:

- it is reasonable to expect that they can be delivered efficiently; and
- projected charges to customers in the period to 2010 do not rise by more than the level of inflation.

Scottish Water's second draft business plan (April 2005)

Scottish Water submitted its second draft business plan to this Office on 20 April 2005. This plan sets out Scottish Water's investment plan for the period 2006-10. It provides detail of the costs involved in delivering the investment objectives set out in the Ministerial Guidance.

The second draft business plan suggests that even the 'essential' objectives set out in the Ministerial Guidance would lead to a significant increase in charges. Scottish Water put forward three alternative solutions to keep charges stable:

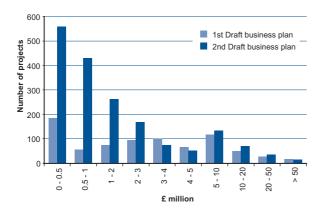
- a re-phasing of the investment objectives, with less being undertaken in 2006-10 and more in 2010-14;
- increasing the borrowing limits permitted to Scottish Water; or
- reducing the scope of the objectives.

Size of the proposed investment programme

In its first draft business plan, Scottish Water had suggested that it should invest some £2.2 billion, not including the overhang from Quality and Standards II, during the 2006-10 regulatory control period. In its second draft business plan, Scottish Water stated that it would need to invest £3.37 billion to meet the Ministers' 'essential' and 'desirable' objectives over the same period. Some £2.92 billion would be required to meet the Ministers' 'essential' objectives. The cost of meeting water quality objectives was the same for both 'essential' and 'desirable' versions of the programme.

There was also a significant increase in the number of projects to be delivered. This increase is set out in Figure 5.6.

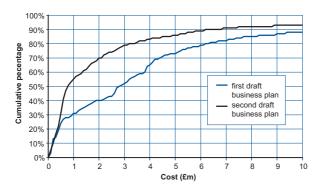
Figure 5.6: Number of projects by size, the first draft business plan compared with the second draft business plan



In the second draft business plan there were 1,797 projects for the 2006-14 period compared with 790 in the first draft business plan. Although this may appear to be a significant number of projects, it is significantly less well defined than Quality and Standards II. Quality and Standards II had a post efficiency value of £1,810 million and WIC 18 – the investment baseline – contained some 3,675 projects. 95

We have also analysed the size of investment projects contained in the second draft business plan. The average size has decreased – but this may be due primarily to greater disaggregation of projects within the proposed investment programme. The results of our analysis are shown in Figure 5.7.

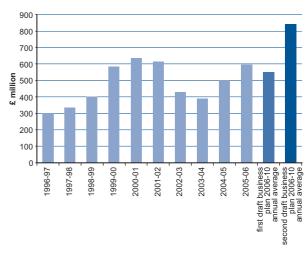
Figure 5.7: Cumulative percentage of projects with a value of between 0 and £10 million



This analysis shows that 89% of projects in the second draft business plan were expected to cost less than £6 million.

Our analysis of Scottish Water's proposed investment programme confirmed that it could not effectively be delivered during the 2006-10 regulatory control period unless there were significant reductions in cost available either because of efficiency or because the investment programme had been over-scoped. Figure 5.8 compares the total investment per year suggested by the first and second draft business plans with historic and actual spending.

Figure 5.8: Total investment per year – comparison of first draft business plan, the second draft business plan and historical performance.



We have, however, been able to identify significant cost reductions in the programme. We discuss these in detail in Chapters 13 and 14.

Summary

Quality and Standards III engaged a wider group of stakeholders throughout the process and set out a detailed list of outputs for the investment programme.

'Investing in Water Services 2006' set out the Scottish Executive's views on the likely costs of different levels and types of investment. The consultation sought views on investment priorities and on whether or not bills should rise to pay for each type of investment. In our response to the consultation we recognised that customers are unlikely to agree fully on priorities and that our principal role was to ensure that customers receive best value for money on a sustainable basis.

The Reporter raised a number of concerns about the cost and scope of Scottish Water's first draft business plan. The proposed investment programme was almost without precedent in the UK water industry. We raised these issues in an open letter to the Minister in December 2004.

The Ministerial Guidance issued in February 2005 completed the Quality and Standards III process and set out in detail the investment objectives for the industry for 2006-14.

In its second draft business plan Scottish Water stated that it would cost £3.37 billion to deliver the Ministers' 'essential' and 'desirable' outputs. It proposed that outputs be delayed or reduced or, alternatively, that more public expenditure was made available. Our analysis confirmed that a capital programme of such a size would not be effectively delivered. However, as we outline in Chapters 13 and 14, we believe that all the outputs required by Ministers can be delivered at a much lower cost.

Section: 2: Capital expenditure Chapter 5: Quality and Standards III

Section 2: Capital expenditure

Chapter 6: Transition from Quality and Standards II to Quality and Standards III

Introduction

In this chapter we discuss the overhang of investment projects that were due to be delivered in the Quality and Standards II period but which will now have to be completed during Quality and Standards III.

Continuity between investment periods and major investment projects means that projects may span two or more regulatory control periods. This is not, in itself, a particular issue for regulators, provided investment is being delivered efficiently. However, difficulties will arise if:

- inefficient investment in the current period means that insufficient funding remains to deliver all of the agreed outputs; and/or
- the overhang is very large and it displaces desirable project outputs from the agreed investment programme.

In Chapter 4 we showed that Quality and Standards II was a large and demanding investment programme. No company of a similar size to Scottish Water has successfully delivered a programme of this magnitude. It now appears likely that a significant proportion of Quality and Standards II will remain undelivered at the start of the next regulatory control period. There are three main reasons for this:

- Scottish Water believed that a radical approach to capital delivery was required to meet the efficiency targets set for Quality and Standards II. It responded by establishing a joint venture, Scottish Water Solutions. The formation of this joint venture significantly slowed progress in the first two years of the current regulatory control period.
- Additional outputs have been added to Quality and Standards II during the period, such as a response to the regulations on dangerous substances.
- Scottish Water has made less progress against efficiency targets than might have been hoped. This has reduced the amount of effective efficient investment delivered.

In this chapter we discuss how this investment overhang might be managed effectively. We then examine how to determine the extent of the overhang from Quality and Standards II and discuss how we have taken account of the overhang in this draft determination.

Monitoring capital investment

Scottish Water's investment programme comprises several thousand projects, ranging in value from a few thousand pounds to more than £80 million. In the Strategic Review of Charges 2002-06, we set the annual post-efficiency investment programme at approximately £450 million each year. Scottish Water is required to manage delivery of all of the investment outputs for the agreed budget. Our role is to monitor its performance in delivering the agreed programme and to ensure that customers receive value for money.

Effective monitoring of the delivery of outputs requires an agreed and clear definition of the output to be delivered at a project level. Although the Quality and Standards process defines the overall objectives of the investment programme, it is still necessary to make sure that outputs at a detailed project level are available. In the absence of such information, stakeholders will be unable to verify that the agreed outputs of the capital programme have been delivered.

In our guidance for Scottish Water's draft business plans, we included a comprehensive format for defining the baseline investment programme⁹⁶. This definition includes the following:

- A unique name, code and geographical reference for each project in the programme.
- A description of the project.
- Information about the 'drivers' for the project. For capital maintenance projects the size, quantity and type of work proposed. For quality and supply/demand projects, information about which agreed 'drivers' are generating the project, such as environmental or water quality legislation.

⁹⁶ This format is provided in our publication 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Volume 5, Chapter 9, Page 77.

- Project costs and, where there are multiple drivers, an allocation of the costs to each of the drivers.
- An appropriate measure of the output (for example, the length of main relined or the quality standard being met).
- The annual projected investment spend for each project.
- The project delivery profile, including key milestones and the expected completion date of the project.

This level of detail reflects the lessons we have learnt from Quality and Standards II. It is, however, no more information than that which Ofwat requires from the companies south of the border. Defining the programme in detail in this way will allow us to monitor delivery of the investment outputs and ensure that customers' money is being well spent. It will also be possible to determine which elements of the programme remain undelivered at the end of the next regulatory control period. Provided money has been spent efficiently, and the size of the overhang is relatively small, it should not be too difficult to manage any overhang from Quality and Standards III into the next regulatory control period.

Our move towards the regulatory capital value (RCV) method of charge setting⁹⁷ will also help ensure that Scottish Water does not benefit from delaying implementation of the capital programme. The next determination of charges will adjust the end-of-period RCV to reflect actual efficient delivery of investment. Scottish Water will only be allowed to earn a return once an investment output has been delivered.

Size of the overhang from Quality and Standards II

It now appears very likely that the Quality and Standards II investment programme will not have been delivered in full by April 2006. We first indicated our concern about the slow delivery of the programme in our Investment and Asset Management report in April 2004. Our analysis has consistently indicated the difficulties that

Scottish Water faced in completing the Quality and Standards II investment programme on time⁹⁸.

We wrote to Scottish Water on 2 September 2004 to raise the following points:

- As work was already underway on the Strategic Review of Charges 2006-10, it was important to complete the audit trail of the process by which the baseline programme for Quality and Standards II is established.
- We required Scottish Water's current best forecast for the extent of delivery of Quality and Standards II as at 1 April 2006. To establish the starting position for the next Strategic Review, and to finalise our methodology for assessing the required capital investment for the period, we required information on the likely extent of delivery of Quality and Standards II.

We wrote to Scottish Water again on 10 September 2004, reiterating our request for this information. We did not receive a response from Scottish Water to either of these letters.

We wrote for a third time on 20 September 2004. This letter explained that we could not finalise our methodology for assessing capital efficiency in the Strategic Review of Charges 2006-10 until we had received a definitive statement from Scottish Water on the Quality and Standards II projects that would not be delivered on time. We advised Scottish Water that we would delay publication of our methodology for assessing capital efficiency until we had received a proper and complete response. We received no response to this letter.

In October 2004 we wrote a regulatory letter to Scottish Water, WIC 47⁹⁹, asking for a final version of the Quality and Standards II programme and a clear statement of the likely position in delivering the programme, at a project level, by the end of March 2006. We explained that it would be difficult to specify the baseline investment programme for the second draft business plan without this information.

⁹⁷ See Chapter 12 of this volume

⁹⁸ See also Chapter 6 of our publication 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Volume 5.

⁹⁹ This letter is available on our website at www.watercommissioner.co.uk

Scottish Water responded to our WIC 47 letter on 14 October. Scottish Water provided three possible scenarios (low, high and best estimate) for the likely capital investment position at the end of the Quality and Standards II period. Under these scenarios, estimates of the non-delivery of the Quality and Standards II baseline programme by 1 April 2006 ranged from £99 million to £180 million.

We responded on 15 October 2004, reiterating our requirement for a detailed estimate of the Quality and Standards II projects that would not have been delivered by the end of March 2006. We reminded Scottish Water that this information was essential if we were to finalise our proposals for establishing a baseline for the Strategic Review of Charges 2006-10. We also informed Scottish Water that, in the absence of a final definition of the current baseline and the expected outcome, we would not be able to agree to any request for an 'early start' programme for Quality and Standards III.

In its first draft business plan, Scottish Water indicated that its latest projection of non-delivery of Quality and Standards II had risen to £194 million. The lack of consistency in Scottish Water's estimates gave us further cause for concern.

In November 2004 we met with Scottish Water to discuss our concerns. In WIC 51¹⁰⁰ we outlined our analysis of the likely Quality and Standards II overhang. This analysis used information from the WIC 18 baseline and Scottish Water's quarterly investment return. This analysis suggested that the overhang could amount to more than £370 million.

Scottish Water's response indicated that it had been unable to replicate our analysis. We therefore provided more detailed analysis of the likely overhang. This analysis made it clear that the actual size of the overhang would depend on the outturn efficiency of the investment delivered before March 2006.

We agreed to work with Scottish Water to finalise a best estimate of the overhang. We discuss the final allowed overhang and how the figure was reached later in this chapter.

Factors contributing to the Quality and Standards II overhang

In preparing this draft determination, we were keen to understand the causes of the overhang. Scottish Water has offered the following explanations:

- An overhang of projects from Quality and Standards I.
- Limited definition of the baseline investment programme.
- Delays associated with Scottish Water's decision to establish Scottish Water Solutions.
- Additional outputs being added to the investment programme.
- Adverse public reaction to a number of the schemes proposed.

We believe that a further factor contributed to the overhang:

 A lack of efficiency in delivering early elements of the programme.

Each of these is examined briefly below.

Overhang of projects from Quality and Standards I

In our Investment and Asset Management Report 2000-02¹⁰¹, we noted that the £888 million invested in the two years between April 2000 and March 2002 was consistent with the forecast expenditure of Quality and Standards I of £890 million¹⁰². We concluded, therefore, that¹⁰³:

"Customers have the right to expect that the obligations of Quality and Standards I have been delivered in full."

Scottish Water, however, has indicated that this was not the case and that, at the start of the Quality and

¹⁰⁰ This letter, 'WIC 51: Potential for a Quality and Standards II overhang' was sent on 19 November 2004. It is available on our website at www.watercommissioner.co.uk

¹⁰¹ This report covered North of Scotland Water Authority, West of Scotland Water Authority and East of Scotland Water Authority.

¹⁰² See 'Investment and Asset Management Report 2000-02, Chapter 5, Section 5.2, page 24.

¹⁰³ See 'Investment and Asset Management Report 2000-02, Chapter 6, page 27.

Standards II period, there was a significant overhang of Quality and Standards I projects. Scottish Water's initial estimate of this overhang was £157 million¹⁰⁴.

Quality and Standards II contained some limited funding for completing delivery of Quality and Standards I obligations. We subsequently agreed to allow an additional £45 million to meet the remaining Quality and Standards I obligations¹⁰⁵.

Our requirement for definition of the Quality and Standards II overhang at a project level will ensure that we are able to monitor delivery of the overhang carefully.

Limited definition of the baseline investment programme

Our efforts to set a clear baseline for Quality and Standards II (WIC 18)¹⁰⁶ have taught us that a fully defined capital investment programme must be in place at the outset of the 2006-10 regulatory control period.

Throughout the Quality and Standards III process we have emphasised the need to define the baseline clearly. Customers have a right to know where their money is being spent, and capital projects such as upgrading treatment plants or renewing pipes can have a major impact on local communities.

Delays associated with establishing Scottish Water Solutions

Table 6.1 shows the levels of investment in the water industry in Scotland since 1996.

Table 6.1: Levels of investment 1996-97 to 2004-05

Year	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Direct capital investment	£252m	£277m	£346m	£397m	£428m	£460m	£353m	£389m	£520m
Investment delivered through PPP	£3m	£15m	£15m	£136m	£170m	£126m	£65m	-	-
Total investment	£255m	£292m	£361m	£533m	£598m	£586m	£418m	£389m	£520m

¹⁰⁴ Contained in Scottish Water's response to our WIC 32 regulatory letter, which is available on our website.

¹⁰⁵ This process is described in detail in our publication 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Volume 5, Chapter 7, page 68.

¹⁰⁶ The issue relating to establishing the Quality and Standards II baseline investment programme was discussed in detail in our document 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Volume 5, Chapter 7, page 66.

As Table 6.1 shows, investment increased between 1996 and 2002 but decreased in the first two years after Scottish Water was formed. Scottish Water has asserted that it was in customers' interests to establish Scottish Water Solutions, as this joint venture company would ultimately markedly improve the efficiency of capital expenditure. Inevitably, the time taken to establish Scottish Water Solutions led to a lower level of investment in the first two years of the 2002-06 regulatory control period.

Additional outputs added to the investment programme

Scottish Water has notified us that they have been required to deliver £110 million of additional outputs during Quality and Standards II. These relate to new obligations concerning site security, the removal of hazardous substances and a higher than expected level of contributions to developers.

Scottish Water has indicated that much of this expenditure will occur in the final year of the current investment period. We have asked the Reporter to scrutinise these additional costs and ensure that they are reasonable. This assessment is unlikely to be complete before the final determination in November 2005. Any issues arising would therefore need to be addressed through the logging up/down process in the Strategic Review of Charges 2010-14.

It is possible that the quality regulators' priorities will be subject to change during the regulatory control period. Normally these changes would be accommodated by substituting the new output for an output of similar value that has become a lower priority. In cases where this is not possible, such issues would be addressed either through an interim determination or the logging up/down process¹⁰⁷.

Adverse public reaction to schemes

We are aware of a number of Quality and Standards II schemes where there has been adverse public reaction to the works proposed. In many cases this has been caused by the lack of clearly defined outputs in the investment programme.

A typical example is planned improvements on the Isle of Arran. The former West of Scotland Water Authority made a number of statements about improvements to the waste water network on Arran, including its intention to provide 'secondary' (biological) waste water treatment. Scottish Water subsequently concluded that the required environmental standards could be met more effectively and efficiently through primary treatment, using longer sea outfalls. A number of residents in Arran are dissatisfied with the revised scheme, which they believe also limits the potential for development. In the absence of a defined investment programme, it has not proved possible to determine whether the original waste water scheme for Arran in Quality and Standards II included funding for growth.

The requirement on Scottish Water to provide a detailed investment programme, specifying outputs at a project level, should ensure clarity about exactly what will be delivered in Quality and Standards III. This will improve public understanding of the extent of works proposed and will help avoid issues which can arise if customer expectations are not met. Scottish Water will also need to ensure that, through appropriate consultation, it seeks to address customers' concerns in the investment delivery process.

Lack of efficiency in delivering early elements of the programme

Our analysis of Scottish Water's quarterly capital investment returns confirms that projects delivered in the early years of Quality and Standards II have not met the efficiency targets set in the Strategic Review of Charges 2002-06. It is, of course, still possible that the whole programme will be delivered to budget but this would require the remainder of the programme to be delivered below the targeted post-efficiency cost for those projects.

Treatment of the overhang in the Strategic Review of Charges 2006-10

The format for Scottish Water's second draft business plan requires project level definition of the overhang in

¹⁰⁷ These processes are explained in Chapter 11 of Volume 3 of our methodology consultation and in Volume 7, chapter 6 of this draft determination.

Table E and Quality and Standards III outputs in Table C. Unfortunately, Table E does not provide us with the level of detail that we require to monitor the delivery of the overhang.

We initially estimated that the size of the Quality and Standards II overhang that should be funded by customers was in the range of £140 million to £180 million ¹⁰⁸. This range was based on deducting the actual amount invested over the 2002-06 period from the total budget for Quality and Standards II. We adjusted the total budget for Quality and Standards II to take account of the unexpected effect of capital inflation in the period 2002-06. We explained the rationale behind our estimate to Scottish Water in a letter dated 16 May 2005. In this letter we asked Scottish Water to make any representations on this assessment by 20 May 2005.

Scottish Water responded on 20 May 2005. It forecast that the remaining value of Quality and Standards II investment after March 2006 would be £283 million. This is consistent with the figure reported in the tables attached to its second draft business plan.

We were not fully persuaded by Scottish Water's explanation of the need for £283 million to deliver the remainder of Quality and Standards II. In particular, we are concerned that Scottish Water again advanced the argument that it had inherited £157 million of Quality and Standards I liabilities. This claim has never been properly justified and, moreover, an agreement was reached in November 2004 that resolved this issue. This agreement should have had the effect that Quality and Standards I liabilities could not explain the overhang from Quality and Standards II.

Our analysis of Scottish Water's claimed allowance indicated that the £283 million included an allowance for likely inflation beyond 31 March 2006, the date when it was originally expected all Quality and Standards II outputs would have been delivered. We made two adjustments to this figure to take account of the effects of inflation:

- First, we removed the effect of inflation post 31 March 2006. This ensures that customers are not expected to fund the additional costs associated with late delivery. This reduced the overhang to £274.5 million (at 2005-06 prices).
- Second, we restated the £274.5 million to 2003-04 prices to ensure that it was presented on a consistent basis with the remainder of the capital expenditure funded in this draft determination. This reduced the £274.5 million to £253 million.

We had also previously agreed with Scottish Water an adjustment to the allowed level of capital expenditure for the 2006-10 regulatory control period to take account of the former East of Scotland Water Authority's claim for capital efficiencies prior to the 2002-06 regulatory control period. It was never possible to substantiate this claim of capital efficiency¹⁰⁹. In the Strategic Review of Charges 2002-06, the capital efficiency targets for each of the three authorities were the same. However, we explained that the actual percentage targets that were set for the former East of Scotland Water Authority were lower. This reflected efficiencies of £114 million claimed by the authority in the definition of its investment needs during Quality and Standards II.

We wrote to the Board of Scottish Water proposing that the £114 million (£80.2 million post efficiency) should be amortised in five equal instalments of £16.04 million during the period from 2006-07 to 2010-11 by adding each instalment to the capital efficiency target applicable to that year. Scottish Water agreed to our proposal in February 2003.

In order to make this agreed adjustment in this draft determination, we have deducted the first four instalments from the allowed Quality and Standards II overhang. This has the effect of making Scottish Water's capital efficiency target larger. When restated at 2003-04 prices, the combined value of these four instalments is £54.9 million.

¹⁰⁸ Letter from the Commissioner to the Chief Executive of Scottish Water, 2 May 2005.

¹⁰⁹ This is also discussed in Volume 5 of our methodology consultation Our work in regulating the Scottish water industry: the scope for capital investment efficiency, p.67.

We have therefore deducted £54.9 million from the overhang of £253 million. This produced an allowed for overhang for Quality and Standards II of £198.1 million.

In Table 6.2 we summarise each step in assessing the appropriate value for the overhang.

Table 6.2: Summary of assessment of overhang that should be funded

	Value of adjustment	Adjusted overhang
Scottish Water's claimed overhang	-	£283m
Reduction for effects of inflation post 31 March 2006	- £8.5m	£274.5m
Restated at 2003-04 prices	- £21.5m	£253m
Reduction for unsubstantiated East of Scotland Water Authority's efficiency claims (at 2003-04 prices)	- £54.9m	£198.1m
Allowed Quality and Standards II overhang	-	£198.1m

It is important to all stakeholders that the outputs of the Quality and Standards II programme are delivered in full. We have allowed Scottish Water at least sufficient funding to ensure that it can deliver the remainder of the outputs efficiently in the 2006-10 regulatory control period.

Summary

Scottish Water is broadly the same size as Anglian Water and Yorkshire Water. Neither of these two companies has ever delivered as large a four-year programme of investment as Quality and Standards II. It now appears that a significant proportion of Quality and Standards II outputs will not have been delivered at the start of the next regulatory period. There appears to be three main reasons for this:

- Delays associated with the creation of Scottish Water Solutions.
- Scottish Water has been required to deliver additional investment outputs.
- Scottish Water has made slow progress in improving its capital efficiency.

In its second draft business plan Scottish Water claimed that it would require £283 million to complete the delivery

of Quality and Standards II. This claim included inflation after the end of the current regulatory control period.

Our analysis suggested that we could reasonably have allowed between £140 million and £180 million for the completion of Quality and Standards II. This amount did not include the unsubstantiated claim for efficiency made by the former East of Scotland Water Authority in 2001.

We have, however, decided to accept Scottish Water's claim but have removed the post 2006 inflation allowance. We have also required Scottish Water to meet its obligations under our agreement to address the unsubstantiated efficiency claim by the former East of Scotland Water Authority.

Section 2: Capital expenditure Chapter 7: Scope for capital efficiency

Introduction

In their February Guidance, the Scottish Ministers defined the investment outputs that Scottish Water had to deliver. In its second draft business plan, submitted in April 2005, Scottish Water set out the detailed investment that it considered would be necessary to meet these investment objectives. This investment was in excess of £3.3 billion in 2003-04 prices.

This chapter explains how we assess the allowed level of capital expenditure. Our analysis reviews the scope for capital efficiency in Scottish Water's investment proposals. Capital expenditure has a major impact on customers' bills. It is therefore important to ensure that investment is delivered as efficiently as possible.

Scottish Water's investment plan has been scrutinised in detail by the Reporter, the quality regulators (the Scottish Environment Protection Agency and the Drinking Water Quality Regulator) and this Office. The Reporter raised a number of concerns about the scope and composition of the proposed investment programme. We therefore asked two firms of engineering consultants and Ofwat to assist us in a more detailed review of the capital programme than we had originally planned.

Scottish Water was required to include¹¹⁰ in its investment plan a detailed list of the Quality and Standards II projects that will not have been delivered by the end of March 2006. We had wanted to review the scope for any synergies between the projects that will not have been delivered in the 2002-06 regulatory control period. Unfortunately, Scottish Water did not provide a sufficiently detailed list to allow us to complete this analysis. We therefore propose to continue to monitor the delivery of our WIC 18 list of Quality and Standards II projects. These will be added to the investment programme for the 2006-10 regulatory control period until the delivery of the outputs is signed off by stakeholders.

Our review of the investment plan provided by Scottish Water established a baseline investment programme. This baseline investment programme lists all of the

projects that are required in order to deliver the 'essential' and 'desirable' outputs specified in the Ministerial Guidance. However, we believe that more definition will be required in several areas before we will be able to monitor this plan effectively.

For capital maintenance, we have taken account of the various elements of the four-stage process that Ofwat used in its 2004 price review¹¹¹. This approach considers both historic levels of capital maintenance expenditure and the changes in the future that are likely to affect the capital maintenance expenditure requirement. As there is no reliable record of historic capital maintenance expenditure in Scotland, we have used historic levels of expenditure in England and Wales combined with the characteristics of Scottish Water's asset and customer bases to assess a 'base' expenditure requirement.

For future capital maintenance expenditure, there is only limited serviceability information available in Scotland. We have therefore taken into account the information available and the views of the Reporter and the quality regulators when assessing the need for additional capital maintenance. The resulting increases in allowed capital maintenance investment should ensure that Scottish Water's assets at least maintain their serviceability. It should be borne in mind that the ongoing enhancement investment programme should lead to a significant increase in the serviceability of the overall asset base.

We have used the cost base approach to assess Scottish Water's relative efficiency in capital expenditure. The allowed level of capital maintenance and capital enhancement expenditure assumes that Scottish Water will improve its efficiency over the regulatory control period.

Figure 7.1 sets out the process we undertook in carrying out our analysis.

¹¹⁰ See our publication, 'Guidance for the 2nd draft business plan', which is available on our website at www.watercommissioner.co.uk

¹¹¹ Ofwat's approach is described in the publications 'Maintaining water and sewerage systems in England and Wales: Our proposed approach for the 2004 periodic review' (May 2002) and 'Setting the price limits for 2005-10: Framework and approach – a consultation paper' (October 2002).

Figure 7.1: Framework for capital investment targets

Ministerial Guidance on the size of the overall investment programme and the outputs required to be delivered

Establish investment programme

Scottish Water Investment Plan submission with initial costs, project by project, and detailed information on outputs

Establish impact of Quality and Standards II overhang and build into baseline investment programme

Reporter & regulator challenge: audit of scope of project solutions and costs

SEPA and DWQR scrutiny: ensure that required outputs are in the investment baseline

Further challenge and scrutiny by two consultant engineering firms and by Ofwat

Review programme and establish a baseline

Capital maintenance baseline investment programme

Capital enhancement baseline investment programme

Ofwat cost base

Assess relative efficiency

Assess

scope to improve

Ofwat capital maintenance econometrics and cost base plus allowances for additional capital maintenance to ensure continuing serviceability

Ofwat targets for capital maintenance and scope for outperformance by

Ofwat targets for capital enhancement and scope for outperformance by

companies companies

Assess degree to which

Assess degree to which scope for improvement is limited by size of investment programme

Assess degree to which scope for improvement is limited by size of investment programme

Target expenditure and outputs

Determine the required level of capital expenditure and the maximum 'desirable' outputs that can be delivered in accordance with Ministerial Guidance and within an overall level of investment spend that is consistent with efficient delivery.

Establishing the initial baseline investment programme

The baseline capital investment programme will contain the detailed list of capital projects that Scottish Water is required to deliver under its regulatory contract for 2006-10. Following this draft determination we will seek to gain a more detailed understanding of the capital maintenance, development constraints and malodour investment that is to be delivered. We discussed our requirements in the previous chapter.

Review of the baseline

All regulators review the draft investment programmes that regulated companies provide¹¹². Our aim is to ensure that customers and stakeholders receive the

maximum possible benefit from Scottish Water's capital investment.

We need to be sure that our efficiency analysis is appropriate and consistent with our goal of improving value for money to customers. There is clearly no point in delivering an ineffective investment plan efficiently.

We do not have detailed technical knowledge of the projects that comprise the investment programme, nor of their impact on water quality and the environment. We have therefore worked with the Reporter, SEPA and the DWQR to review Scottish Water's investment proposals.

We also sought assurances from both SEPA and the DWQR that the 'quality' element of Scottish Water's investment proposals met the objectives outlined in the February Ministerial Guidance.

Given the very high cost of the investment included in Scottish Water's second draft business plan and the concerns expressed by the Reporter, we contracted Black and Veatch and Faber Maunsell to conduct a more detailed review of the investment programme. We also asked Ofwat to assist us in reviewing the programme and in assessing the cost and scope of the proposed investment.

We asked both the Reporter and our independent consultants to use the following criteria in their review of the investment programme:

- Is the programme sufficiently well defined to allow customers and stakeholders to monitor delivery? In particular, does it meet the level of definition set out in our guidelines?
- If delivered in full, does the proposed programme meet the objectives set out in Ministerial Guidance? If not, what are the omissions? If so, does it exceed the requirements? In particular, do the quality regulators, SEPA and the DWQR, agree that the relevant quality objectives will be met by the proposed investment?
- Are there projects in the programme that do not contribute to the required objectives?

¹¹² A description of the reviews carried out by Ofwat and the Office of the Rail Regulator is provided in Volume 5 of our methodology consultation: 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Chapter 10, Section 10.3.

- Are there errors in the programme; for example, in the identification of projects and the associated outputs?
- Is the programme properly costed?
- Are the solutions proposed by Scottish Water appropriate?
- Do they represent best practice?
- Are the proposed solutions supported by the DWQR and SEPA?
- Have measurable, defined outputs been allocated to the projects in the programme?
- Do the projects have clearly defined delivery dates?
- Are the delivery dates realistic, both in terms of individual project construction times and the overall capacity of the industry to deliver the programme efficiently?

The process of reviewing the investment programme has provided us with clear evidence of over-scoping within the second draft investment plan.

The output from this review is a properly (but not necessarily efficiently) costed, fully defined list of quality enhancement capital investment projects. The results of this detailed review are discussed in Chapter 14.

Establishing the scope for efficiency

In calculating the scope for efficiency in the baseline investment programme, our approach has been informed by Ofwat's analysis for the 2004 price review in England and Wales.

Ofwat makes separate assessments of efficiency for capital maintenance and capital enhancement investment. We have also made two separate assessments.

Assessing the efficient level of capital maintenance

Our methodology for determining the efficient level of capital maintenance expenditure included the following stages:

- An assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment was informed by Ofwat's capital maintenance econometric models.
- An adjustment to the required level of capital maintenance expenditure to take account of any circumstances specific to Scotland that could affect Scottish Water's costs.
- An adjustment to the required level of capital maintenance expenditure to take account of Scottish Water's current higher cost base relative to the companies in England and Wales. This adjustment helps to ensure that Scottish Water maintains the serviceability of its asset base. We discuss this in more detail in Chapter 13.

Validating the results of the econometric assessment

We are confident that our approach is robust. To validate the econometric assessment, we have carried out a separate series of high-level comparisons between our econometric assessment of capital maintenance requirements for Scottish Water and the historic and planned levels of capital maintenance expenditure in England and Wales. In these comparisons we took account of:

- the value of the asset base, and
- the number and type of assets.

Assessing efficiency for capital enhancement projects

We used Ofwat's cost base approach to benchmark Scottish Water's efficiency in delivering capital enhancement projects. We took account of special factors relating to the industry in Scotland.

We recognise that this analysis is particularly specialised. We therefore commissioned independent consultants, Faber Maunsell, to carry out the analysis of relative efficiency. The results of their work were reviewed by SMC (Strategic Management Consultants) and by Ofwat to ensure that our approach was consistent with that adopted south of the border.

We have adopted Ofwat's cost base model and approach, and applied this to the capital investment plan proposed by Scottish Water. This means that we have compared the standard costs prepared by Scottish Water to the basket of standard costs that Ofwat has received from the water and sewerage companies in England and Wales for the 2004 price determination. This comparison allows us to assess the relative capital efficiency of Scottish Water compared with the other companies. We have made this assessment by following the approach used by Ofwat in the 2004 determination, except that we have not adjusted any of the benchmark standard costs previously chosen by Ofwat. The key steps in the approach are illustrated in Figure 7.2.

Figure 7.2: Key stages in application of cost base efficiency assessment

Review company submission for material non-compliance, omissions and/or errors.

Review Reporters' reports to identify non-compliance in companies' submissions and provision of correction factors.

Request clarification of material issues noted above and review responses from companies/Reporters.

Adjust standard costs in line with company/Reporter responses.

Adjust EJG¹¹³ in line with specification.

Ignore standard costs with EJGs of less than B3.

Ignore standard costs where compliance is not adequately confirmed.

Factor in regional price variations as appropriate.

Identify benchmark costs/companies representing $\geq 3\,\%$ of industry turnover.

Independent endorsement of relevant benchmark by Ofwat consultant $^{114}.$

Calculate the gap between each Scottish Water standard cost and the England and Wales benchmark cost. This is the efficiency gap or a standard cost. Take a proportion of this gap as the scope for improvement adjustment for each standard cost.

Weight and combine the scope for improvement adjustment using the relevant proportions of Scottish Water's forecast capital investment for the next regulatory control period to give a catch-up factor at investment programme level by service.

The combined catch-up factors are the improvement targets we have built into the investment assumed in charge caps.

The results of our assessment are outlined in Chapter 14.

The impact of operating in Scotland – special factors

We endeavoured to ensure that we had considered all of the factors that influence investment costs. We excluded factors that are within the control of management. We have, however, taken account of factors that are beyond management control. These could either increase or decrease the level of cost.

¹¹³ Engineering Judgement Grades – these are 'confidence' grades assigned to the information contained in the submission.

With completion of this step in the approach, Ofwat has derived robust benchmark costs. We have taken these benchmark costs and compared them with the standard costs submitted by Scottish Water, following the same approach that Ofwat has used. This assessment was carried out by our consultants with guidance from Ofwat.

We asked Scottish Water, as part of its business plan submissions, to draw to our attention all factors that either increase or decrease costs. We were keen to ensure that our efficiency targets neither unduly penalised nor rewarded Scottish Water.

Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. However, we analyse any special factors identified by Scottish Water and take account of this analysis in drawing conclusions about the relative efficiency of Scottish Water. We believe that such objective measurement of performance helps to ensure that customers receive value for money.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (size, remote islands, long coastline, topography).
- Its population settlement patterns (remote communities, concentrated dense urban areas).
- The extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works).
- The quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps etc).
- The nature of the customer base.
- The fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management).
- The short time that Scottish Water has had to mature and improve.

Scottish Water had to provide evidence in the following areas to justify an adjustment to the assessed capital efficiency based on a special factor:

- What is the justification for the special factor?
 Scottish Water was required to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and waste water systems in its area of supply.
- How do the special factors impact on Scottish Water's costs?
- How has Scottish Water sought to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs? If so, have these been quantified and offset against the upward cost pressures?

In its first draft business plan, Scottish Water did not include any special factor claims relating to capital investment, although it did make a 'regional adjustment' to its costs.

In its second draft business plan, Scottish Water made two claims for special factors in capital expenditure. We review these claims in Chapter 13.

Applying the scope for efficiency

We assessed the scope for efficiency for both capital maintenance and capital enhancement at a programme level. We have not sought to review the relative efficiency of individual projects. The project costs contained in the baseline programme are therefore the pre-efficiency costs. It will be for Scottish Water to determine how these same projects will, at a programme level, be delivered within the overall post-efficiency budget.

We have taken account of the scope for efficiency in the funding that we have made available for delivering the baseline capital investment programme. This is the funding included in the regulatory contract between Scottish Water and its customers. It should be seen as the minimum acceptable level of performance. If Scottish Water fails to meet this minimum acceptable level of performance for investment delivery then

Ministers will have to decide how this should be managed. In our view, customers should not be expected to pay twice for the required investment outputs.

The scope for efficiency is assessed at a programme level. It is for Scottish Water to decide how best to deliver the detailed baseline within its regulatory contract.

Conclusion

Scottish Water's investment plan contains a detailed list of projects and their associated outputs. We will, however, need to undertake further work to define aspects of the proposed investment in capital maintenance, odour and growth.

Scottish Water did not provide the detailed information that we would have liked on the Quality and Standards II projects that will not have been delivered by the end of March 2006. We will therefore simply add our WIC 18 list of Quality and Standards II projects to the investment programme for the 2006-10 regulatory control period.

We have worked with the Reporter and the quality regulators to check that this plan is consistent with the objectives set out by Ministers. We were concerned about the size of the investment that Scottish Water claimed to be necessary to meet the Ministers' objectives and about issues which the Reporter raised. As a result, we adapted the approach outlined in our methodology consultation and commissioned an additional detailed review of the proposed capital programme by two consultant engineering firms and by Ofwat.

This review of Scottish Water's investment plan has resulted in a baseline investment programme. This baseline lists the projects required to deliver the investment requirements for quality enhancement priorities.

We used both Ofwat's cost base approach and econometric models to assess an achievable, efficient level of capital maintenance expenditure. We used Ofwat's cost base approach in making our assessment of capital efficiency for enhancement investment. We have also reviewed the impact of special factors.

Section 3: PPP contracts

Chapter 8: Background to PPP contracts

Introduction

In this section we discuss the role that Public Private Partnerships (PPP) play in delivering Scottish Water's capital programme. PPP accounts for some 11% of Scottish Water's current spending. It is therefore important to examine the experience of using PPP in the Scottish water industry. PPP should deliver value for money to customers and Scottish Water should be alert for any opportunities to reduce the costs associated with PPP contracts.

This chapter describes the background to PPP in the Scottish water industry. It also explains how PPP has been used as a mechanism by the three former water authorities to deliver capital investment. It discusses how the water authorities tendered PPP projects, and how these projects were, and continue to be, operated.

In the chapters that follow we discuss why we believe it is important to continue to monitor the benefits that PPP brings to customers. We go on to describe how we will monitor the costs and benefits of PPP and the prospects for PPP in the coming regulatory control period.

Background to PPP

Public Private Partnerships are a range of business structures and partnership arrangements between the private and public sectors. PPP is a mechanism to use private sector expertise and capital in the delivery of public sector services. An example of a PPP arrangement is where the private sector (the contractor) is contracted to construct and operate new facilities, for which the public sector (the authority) then pays an annual fee. This annual fee typically covers initial and ongoing capital expenditure, financing costs and the operating costs of the new facilities.

Delivering services remains the responsibility of the public sector organisation. PPP can have a variety of different applications. It is used by a number of different types of organisation to deliver a number of different services. The range of organisations that use PPP is diverse, from schools and hospitals to the water and sewerage industry in Scotland.

Until 1993, new capital assets in the public sector were funded by a combination of new loans and, where appropriate, customer revenue. In 1993, the Private Finance Initiative (PFI) was introduced as an alternative way to finance and deliver public services. The PFI was later developed further and renamed Public Private Partnerships. PPP placed emphasis on the partnerships that would need to exist between the private and public sectors if this method of service delivery were to be fully effective.

While the original aim of PPP was to reduce the demand for new loans from central government for capital investment, the main benefit from successful schemes appears to have been the timely delivery of, and innovative solutions for, building and operating new facilities. These benefits ensure that customers' bills are lower than they would otherwise have been and that customers receive a better service, more quickly.

Use of PPP in the Scottish water industry

By 1997, it had become clear that there needed to be a step change in the level of investment achieved by the water and sewerage industry if the industry was going to comply with pressing environmental deadlines. Little had been done to ensure compliance with the 1991 Urban Waste Water Treatment Directive (UWWTD) prior to the creation of the three water authorities in April 1996.

The extent of the investment required, and the exceptionally tight timescales, presented a challenge for traditional methods of public sector procurement. The PPP route appeared to offer an attractive alternative. It seemed likely that this route would deliver benefits more immediately, within the constraints of public expenditure, and would keep charge increases as low as possible. It is an essential criterion of PPP that value for money in delivering investment is demonstrated against traditional public sector delivery of equivalent outputs.

All nine of the PPP contracts were initiated by the three former water authorities. Each of the authorities assessed the improvement in waste water treatment that had to be delivered in order to comply with the requirements of the UWWTD. One of the options that the authorities considered was to let a concession for a period of 25-30 years. This concession involved designing, building, operating, and financing the required improvement in waste water treatment.

Initial costs and external fees in preparing contracts, both for the authorities and the competing consortia, can be substantial. These initial expenses included legal, due diligence and capital commitment fees. These projects benefit from large scale in the collection and treatment of waste water and sludge. As a result, set-up costs were a reasonable proportion of the total cost. This high initial cost tends to mean that PPP is not appropriate for smaller projects.

The water authorities invited responses from the private sector, which were then compared with the best traditional public sector procurement option. The aim of this appraisal was to ensure that the authorities' service delivery and compliance criteria were met in the most effective manner and would provide best value. The appraisal process and subsequent negotiations with consortia of service providers, their advisors and financiers was sometimes protracted (being governed by EU and domestic procurement legislation and involving liaison with government).

A consortium usually consisted of a consultant engineering and design firm, a construction contractor and an operations company. These organisations formed a joint company to provide specific services to the authority. Consortium members also had to accept responsibility for maintenance over the contract period, as well as accepting the inherent risks of project delays, cost over-runs and volume changes caused by shifts in demand. The consortia were also required to deliver the service within tightly specified parameters.

The benefits for the partnership companies included:

- the long operating franchise, with a guaranteed return if the service level agreement is met; and
- the opportunity to establish or develop a presence in the Scottish marketplace.

The outcomes from the nine projects appear to have realised considerable tangible benefits in the short term. These benefits are further discussed below.

Operation of PPP

An essential element of PPP is the transfer of risk from the public to the private sector. This meant that the authority concerned did not have to record the assets or liabilities associated with delivering the project on its balance sheet. Once the PPP waste water treatment works were commissioned, the authority started to pay the partnership companies a fee that reflected the volumetric and qualitative services provided to the authority for that period. This fee was an operational expenditure item for the authority, although the charge reflected the operating, capital and financing costs of the consortium, that delivered the service.

The consortium's books and records were open to inspection so that the authority could verify the fees and ensure compliance with all contracted obligations. For the duration of the contract the consortium owns assets that have been adopted, or are constructed or modernised. At the end of the contract, all assets will revert to Scottish Water, and are required to be in a fully operable condition.

Each of the PPP contracts provides for the indexation of fees. These vary in line with annual inflation indices, but apply only to operating and capital maintenance costs. The consortium bears all existing risks for the agreed fee. However, if a tightening of environmental standards resulted in a requirement for significant new capital or operational expenditure, the fee would be renegotiated. There is also a provision which governs the sharing of net revenue arising from third party use of the treatment works.

To date there has been no indication of profit sharing with any of the authorities or with Scottish Water. The onus would be on Scottish Water to monitor closely the delivery of service and try to negotiate a share in the benefits of any additional efficiency.

Customer benefits

The principal benefits of these nine PPPs to customers should be:

- the provision of improved waste water treatment to secondary and tertiary levels fully compliant with EU standards, and in some cases to primary level where none existed before;
- quicker delivery of the service;
- more cost-effective construction and delivery of service; and
- charges that are variable and reflect the annualised costs of the service used.

The Transport & Environment Committee's 9th Report 2001 contains details of eight projects that were fully agreed up until June 2001. The report also presents the combined operational and capital cost efficiencies, compared with the public sector alternative, for each of these schemes. The largest savings achieved by each authority were reported as follows:

- North of Scotland Water Authority reported a 19% efficiency in the Aberdeen PPP scheme;
- West of Scotland Water Authority reported a 29% efficiency in the Meadowhead, Stevenston & Inverclyde PPP scheme; and
- East of Scotland Water Authority reported a 42% efficiency in the Almond Valley, Seafield & Esk Valley PPP scheme.

One of the major potential advantages, from the customer's perspective, of the PPP method of service delivery is that it ensures that the service is delivered before significant cost is incurred. It also brings with it the market disciplines of finance, management, construction and operation, and does so over the whole life of the agreed project. It is the more efficient whole life management of the project that principally differentiated PPP from the investment delivery of the three former water authorities.

The annual cost of the services provided represents a major component of Scottish Water's costs (around 11%) and therefore its future bills. In their evidence to the Transport & Environment Committee, the authorities claimed that the use of PPP to comply with EU standards, rather than the conventional procurement options, had reduced the increase in revenue required by the water industry by approximately £33 million each year¹¹⁵. This was equivalent to about 4% of customers' bills (or nearly £10 for the average household) at that time. Estimates of the savings achieved in each project are summarised in Table 8.1.

Table 8.1: Annual savings estimated by each authority

	No of schemes	Water authority estimate of annual savings
East of Scotland Water Authority	2	£20m
North of Scotland Water Authority	3	£6m
West of Scotland Water Authority	3	£7m
Total	8	£33m

Where conventional procurement and funding provided the same services at lower cost, the PPP route was not followed. The Montrose scheme, which North of Scotland Water Authority originally expected to complete by means of a PPP, proved to be better value if procured by traditional means.

PPP projects in progress

The nine PPP contracts represent a capital investment on behalf of customers of around £550 million, which contrasted with an estimated investment of more than £700 million under the conventional procurement route.

The contracted solutions for the collection, transmission and treatment of waste water and its resultant sludge were tailored to each project's particular location. The annual fees are therefore not comparable on an aggregate basis, but only when the actual service delivered and the construction of assets is taken into account.

The schemes were complex and involved developing and improving sewerage mains, pumping stations,

¹¹⁵ Representing the claimed saving in annualised capital and operating costs, as submitted in the authorities' evidence to the Transport & Environment Committee.

storage facilities, treatment works, outfalls and sludge treatment facilities. The nine projects were in operation by the end of 2002-03. They currently process some 50% of Scotland's total waste water. They also process some 80% of Scotlish Water's sludge. PPP projects account for virtually all of the waste water treatment in non-rural areas of Scotland. The sewerage needs of rural areas are likely to continue to be met by projects procured in the traditional way.

The nine projects are outlined in Table 8.2. This also shows the projected fee payable to each consortium.

Table 8.2: PPP contracts with Scottish Water

Project name: Company name	Contract signed	Duration years	Construction costs	Annual fee in 2003-04
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£21m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£9m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£7m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£19m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment(Moray) Ltd	2001	30	£60m	£11m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£14m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m ¹¹⁶

There were important differences in what had been agreed between the contracting parties. The most obvious was that in the three projects contracted by the West of Scotland Water Authority, operational staff from the authority (now Scottish Water) work in the waste water treatment works and continue to be paid directly by Scottish Water. These costs are not included in the costs quoted above. Scottish Water also continues to pay local authority business rates, since there is no risk transfer benefit from the consortium paying this directly. Table 8.2 therefore does not include business rate costs that are still incurred by Scottish Water.

There are also costs that relate to insuring and maintaining the assets transferred to PPP schemes, which ceased to be direct costs to Scottish Water (East of Scotland Water Authority transferred £30 million of treatment works). Assets and equipment that become redundant as a result of the PPP may be closed and sold. This has two benefits: there is no longer a need to operate these assets and incur expense; and it may be possible to realise cash from the sale of associated land.

Conclusion

To date, PPP has played a significant role in delivering waste water services to customers in Scotland. The nine projects in operation process some 50% of Scotland's total waste water and 80% of its sludge. The projects have substituted the need for a large upfront capital payment with a series of annual operational payments. They also appear to have transferred the inherent risks of project delays and cost over-runs associated with the delivery of large capital investment from Scottish Water, and hence customers, to the contractors.

It is important, however, to consider the value for money that customers have received from the use of PPP. PPP currently represents around 11% of Scottish Water's expenditure and it is important that customers receive full benefit from the transfer of risks from the public to private sectors. In the next chapter we examine further the financial implications of PPP, whether it originally provided customers with value for money, and whether it still represents value for money.

¹¹⁶ Totals may not sum exactly due to rounding.

Section 3: PPP contracts

Chapter 9: Why it is important to reassess the value for money represented by PPP

Introduction

In the previous chapter, we discussed how the then three water authorities entered into nine PPP contracts for construction and operation of waste water treatment works across Scotland. These contracts allowed the authorities to swap the initial capital, financing, maintenance and operating costs they would otherwise have incurred for a series of annual payments to contractors. These contracts transferred the risks associated with delivering capital investment to the private sector partners.

At the end of the PPP contracts (which will run for between 25 and 40 years) the waste water treatment works will pass into Scottish Water's ownership. Customers should have benefited from a value for money service and the private contractors should have earned a fair return on their investment.

In this chapter, we examine the financial implications of PPP, whether it originally provided value for money for customers, and whether it still represents value for money.

The financial and efficiency consequences of PPP

It is unfortunate that analysis of PPP projects often focuses on the benefits of substituting an operational payment for a large upfront capital payment. Similarly, some commentators focus on the relative merits of the public and private sectors in general. While it is true that the impact of meeting the UWWTD would have placed a very large burden on public spending over a short timescale, the key measure should be whether PPP achieved value for money for customers.

Our analysis of value for money of the PPP contracts must take into account all of the costs that are met by the private sector partner and the risks that are transferred. It is therefore important to understand that the annual charge that Scottish Water pays to contractors comprises four main components:

initial capital investment (construction, refurbishment etc);

- · maintenance during the contract;
- operating costs; and
- financing costs (these include both interest costs and the return on the consortium partners' equity).

We consider that if customers pay less for the service provided by the PPP contractor than they would have done if the output had been delivered by conventional procurement, then they have received value for money.

Has PPP provided value for money to date?

In 2001 we reviewed whether the PPP contracts undertaken by the then three authorities represented value for money for customers. The evidence suggested that these schemes were all delivered at a lower cost for customers than would have been achieved, at that time, by the three authorities under traditional procurement methods.

We outlined our analysis in the Strategic Review of Charges 2002-06:

"The annual charge for PPP schemes covers the capital financing costs, maintenance, and day-to-day running costs. Assuming an average weighted cost of capital of 7.5% before tax, the financing cost of an investment of £550 million, annuitised over 25 years, is around £48 million per year. On this assumption, the remaining annual costs of PPP, some £64 million, cover operating and capital maintenance costs. If I compare these costs with information from England and Wales and from the authorities, capital maintenance costs probably account for about half of this £64 million. This leaves £32 million to cover the pure operating costs of the consortium. This cost can be benchmarked against England and Wales, using my adapted version of Ofwat's econometric models.

The results of analysis using the econometric models are instructive. The benchmark costs for operating similar works to those provided in Scotland by the PPP in England is approximately £22 million. There may be some special factors that might very moderately

increase this allowance for efficient operation. This may be as much as £1 million, taking the allowable operating costs at the frontier of efficiency to £23 million [...].

In general terms, my analysis shows that operating costs in Scotland are currently approximately double what they should be possible to achieve. On this basis my expectation would be that if the Scottish industry were to operate these works, the likely operating costs would be £46 million. The £32 million of operating cost included in the PPP contracts therefore compares favourably with the operating costs that would otherwise have been incurred. The 7.5% discount rate on the capital is also broadly equivalent to the 6% real rate that the public sector is required to use [...].

It would appear (as would almost certainly be expected) that the value of the gap between the efficiency frontier and current Scottish authority performance has been shared. It is therefore possible to conclude that PPP to date in Scotland has delivered some quite significant benefits to customers. These benefits include more timely compliance with the UWWTD and the removal of operating cost and capital delivery risk. Most importantly, customers will actually pay less for the service provided by the PPP contractor than they would have done under traditional procurement¹¹⁷."

Since we undertook our analysis in 2001, however, a number of issues have arisen that have led us to believe that it is important to conduct a fresh assessment of the value for money represented by these PPP contracts.

Can PPP continue to provide value for money?

We have identified three reasons why we believe that it is important to undertake a fresh assessment of the PPP contracts:

- Scottish Water's improvement in its operating cost efficiency;
- · the lower real costs of capital; and
- a potential need for further investment by Scottish Water.

We examine each of these issues below.

Operating costs

It appears likely that Scottish Water will deliver the improvement in operating cost efficiency that we included in the Strategic Review of Charges 2002-06. The net present value of operating costs during the concession is significant. It is therefore important to ensure that the price customers are paying for this element of service provided by the PPP consortia is fair. The level of operating costs implied by the PPP contracts (if the cost of capital is broadly consistent with Ofwat's assessment of the cost of capital for the water industry south of the border) appears high. The implied level of operating costs would be higher than the costs that Scottish Water would now incur to operate these waste water treatment works.

In the Strategic Review of Charges 2002-06 we noted that if Scottish Water were able to reach the operating efficiency targets set at the review (which it now looks likely to have done), then there may be some benefit in revisiting the PPP arrangements with the consortia. We noted that it might be possible to reduce the inefficiency share that went to the consortia, once the industry in Scotland can demonstrate that it could operate the assets more efficiently than the originally agreed operating cost¹¹⁸. We return to this issue in the next chapter.

The financing costs included in the annual PPP charges cover the interest charges on loans taken out by the consortia and the equity return required by the consortia partners on their initial investment. Typically, the equity funding of a PPP contract will be relatively small.

We have identified three reasons why we believe that it may be possible for the PPP consortia to reduce the cost of capital included in the annual charge they make to Scottish Water:

- over the last few years the real cost of long-term borrowing has declined quite significantly;
- some of the earlier contracts may have included an additional risk premium in the cost of capital to reflect the novelty of delivering waste water projects through PPPs; and

^{117 &#}x27;Strategic Review of Charges 2002-06', page 181.

^{118 &#}x27;Strategic Review of Charges 2002-06', page 181.

 since all of Scottish Water's PPP projects are now fully operational, any risk premium to reflect initial construction risks is no longer appropriate.

There may therefore be an opportunity to refinance loans that were taken out at the start of the construction of the waste water treatment works.

In our view, any benefits of refinancing should be shared between the PPP consortium and the public sector partner. We understand that most of Scottish Water's PPP contracts contain no mechanism to ensure that customers can share in any gains from the refinancing of debt. However, this should not preclude Scottish Water from proactively discussing refinancing opportunities with its PPP contractors.

Our analysis shows that the actual return on equity for the PPP consortia appears to be quite high. Some respondents to our methodology consultation asserted that this should be the contractual entitlement of the contracted consortium. We agree that companies deserve to earn a commercial return but this should reflect the operational risk transferred.

Potential need for further investment

PPP contracts normally specify the type and quality of service that the contracted consortium is required to deliver over the period of the concession. The nine PPP projects undertaken by Scottish Water were all designed to ensure compliance with the UWWTD. As such, we would expect the 21 waste water treatment works that the projects delivered to continue to comply with the standards set out in the UWWTD throughout their contracted lives.

Given the length of the PPP contracts, it is likely that it will become more challenging to achieve the standards of discharge required from a waste water treatment works. In many instances, operators of treatment works will know the likely timing of tighter environmental consents and will plan capital maintenance in such a way as to minimise whole life costs.

We consider that Scottish Water may appropriately question:

- why additional investment is needed at the PPP sites (for example, has the problem arisen because of a lack of capital maintenance?); and
- who, according to the PPP contracts, is liable for incurring the cost.

Given the possibility that it may be necessary to renegotiate some of the PPP contracts to deliver objectives set out in the February's Ministerial Guidance, there may perhaps be the opportunity to improve the value for money offered to customers. We discuss in Chapter 11 the extra PPP operating costs that we have made available to deliver the objectives set out by Ministers.

Conclusion

We remain convinced that the PPP contracts represented a reasonable deal for customers at the time that the contracts were first set up. However, the improvement in Scottish Water's operating cost efficiency and the reduction in the real cost of capital makes it less clear that these contracts still represent value for money. Given that the contracts will need to be renegotiated to ensure that the Ministers' objectives can be effectively met, there may be an opportunity to improve the value for money that these contracts offer to the customers of Scottish Water.

We examine the value for money offered by the PPP contracts in more detail in the next chapter.

Section 3: PPP contracts Chapter 10: Our approach to analysing PPP

Introduction

This chapter looks at Scottish Water's PPP contracts in more detail. It assesses the extent to which these contracts represent value for money at the current time. In 2001, our Strategic Review of Charges 2002-06 concluded that the contracts represented reasonable value for money. However, we also cautioned that if the industry improved its efficiency in line with the targets that we set in that review, then it was likely that the contracts would no longer represent value for money. Scottish Water looks likely to have reduced its operating costs by more than 35% in real terms during the 2002-06 regulatory control period. It is therefore important to re-evaluate the value for money to customers of these contracts.

Approach to analysing PPP

Our analysis is based on two aspects of the PPP contracts:

- the annual fee that Scottish Water pays to the contractors; and
- the level of service provided.

The annual fee

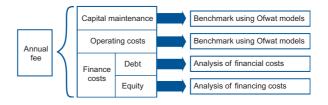
If the waste water plants had been built through a traditional procurement route, Scottish Water would have paid the initial capital costs, the interest charges on borrowing, ongoing capital maintenance and the annual operating costs. Under a PPP contract, the contractor meets all of these costs. Scottish Water pays an annual fee to the PPP contractor. This fee remunerates the contractor for building and operating the treatment works. We have looked at the expenses that have had to be met by the PPP contractors and compared this with the annual cost of the concessions. The PPP contractor has had to build or refurbish the waste water treatment works. The total capital cost of upgrading these waste water treatment works is estimated at £550 million. We have assumed that the upgrades were delivered for the expected capital cost. The annual fee therefore has to cover:

capital maintenance;

- · operating costs; and
- financing costs.

Figure 10.1 shows each component of the charge.

Figure 10.1: Approach to analysing the PPP annual fee



Capital maintenance

Capital maintenance costs are those that are required to maintain the operational performance of the assets.

We have used Ofwat's capital maintenance econometric models to assess how much it would cost a similar water and waste water company operating at an average level of efficiency to perform this capital maintenance. This would seem to provide a conservative estimate of current costs, particularly as the treatment works have only relatively recently been upgraded.

Operating costs

The PPP contractors incur day-to-day running costs such as employing staff and providing chemicals for the treatment of waste.

We have used Ofwat's operating cost econometric models to establish the level of operating cost that a water and waste water company of average efficiency would incur to operate broadly similar waste water treatment works south of the border. The assumption of average efficiency does not seem unreasonable given that the works are relatively new.

Financing costs

The financing costs should reflect the initial investment in building the works and any costs associated with the set-

up of the project. Such set-up costs may be quite significant and will include legal, finance arrangement and due diligence costs. The PPP contracts will use both debt and equity funding. The return on equity funding will be generated by any profit made by the PPP contractor. The contractor may face a taxation charge on this profit, although this is likely to be quite small.

The actual level of the financing costs will principally be a function of the capital costs of the waste water treatment works. The return on the equity portion of the project financing will be very sensitive to the actual initial capital cost of the project.

The outcome of our analysis

In 2003-04, Scottish Water paid the PPP contractors approximately £112 million. We have used Ofwat's capital maintenance and operating cost econometric models to review the likely capital maintenance and operating costs. The models suggest that capital maintenance costs at average efficiency would amount to around £20 million.

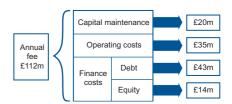
The Ofwat operating cost models suggest that operating costs at average efficiency would amount to approximately £35 million¹¹⁹.

The remaining £57 million of the annual charge could be attributed to financing costs.

If 90% of the initial capital costs were funded through debt and 10% through equity, then we can estimate the annual interest and principal repayment costs at approximately £43 million 120. This would leave £13 million as a return for the equity invested in the project by the PPP contractors. This would imply an equity return of under 20% 121.

Figure 10.2 shows the breakdown of the annual cost of the PPP contract.

Figure 10.2: Estimated value of the components of the annual fee 2003-04



This analysis is highly sensitive to the assumptions that underpin the analysis. Table 10.1 shows the sensitivity of the analysis to the initial capital cost of refurbishing the treatment works.

Table 10.1: Sensitivity of implied equity return to initial capital cost of asset refurbishment

Initial capital expenditure	Equity investment of £55 million (10% of budget)	Equity investment (10% of actual outturn capital expenditure)
£500 million	20.2%	20.7%
£550 million	16.1%	16.1%
£600 million	12.3%	12.2%
£650 million	8.7%	8.7%
£700 million	5.4%	5.6%

Table 10.2 shows the sensitivity of the equity return (under the 10% equity financing of initial capital expenditure) to the level of capital maintenance and operating costs.

Table 10.2: Sensitivity of the equity return to the level of capital maintenance and operating costs

		% of b	enchma	rked ave	rage cap	ital main	tenance	spend
		0%	60%	80%	100%	120%	140%	160%
ed	80%	34.3%	26.7%	24.0%	21.2%	18.1%	14.9%	11.3%
narke ting o	100%	30.1%	22.1%	19.1%	16.1%	12.7%	8.9%	4.4%
enchmark	120%	25.7%	17.2%	14.0%	10.5%	6.4%	1.2%	-9.0%
% of benchmarked average operating co	140%	21.1%	11.8%	8.1%	3.7%	-2.8%	-48.3%	n.a.
% aver	160%	16.3%	5.7%	0.6%	-8.3%	n.a.	n.a.	n.a.

¹¹⁹ This figure comprises all operating costs, including charges paid to SEPA and local authority rates, where appropriate.

¹²⁰ This is based on a fixed annual percentage interest rate of 7.5%, with 27 equal payments made at the end of each year of the concession. The initial capital cost is assumed to be £550 million.

¹²¹ This is the internal rate of return on the assumption that the interest charges are fixed and the operating costs and capital maintenance costs are at average efficiency. We have assumed that the equity and debt were committed two years before the treatment works were fully operational. We have also assumed that Scottish Water made a payment equal to the PPP contractors' interest and principal repayment cost in the year before full operation.

The equity return clearly diminishes rapidly when the project is delivered at less than average capital and operating cost efficiency. This demonstrates why the projects represented reasonable value for money at the time that they were concluded. It would appear, however, that since the treatment works are now operational and Scottish Water has significantly improved its operating cost efficiency, there could be scope for customers to share in the benefits that would appear to be available from refinancing.

The costs and benefits of PPP

The PPP contracts undoubtedly benefited customers of the Scottish water industry, enabling the three authorities to comply more quickly with the Urban Waste Water Treatment Directive (1991).

In the Strategic Review of Charges 2002-06, we noted that the cost of providing the required new treatment works using the PPP route was £550 million. The authorities estimated that the cost of these works would have been £700 million using traditional procurement. The three authorities also incurred operating and capital maintenance costs that were some 40-65% higher than the average south of the border. Our analysis shows that PPP offered a more efficient option than traditional procurement and operation of the same treatment works by the three authorities.

However, at the current time the PPP contractors would appear to be earning a relatively high return on their investment. In March 2004, AWG sold its stake in the Tay PFI to Henderson Private Capital¹²² for approximately £10 million. According to its 2004 Annual Report, AWG made £4.9 million profit on the sale. This profit is consistent with our analysis of the equity return on the PPP contracts.

To an extent this equity return can be justified by the risk that the PPP contractors took in agreeing to build the treatment works for a much lower cost than the three authorities. The risks that the contractors absorbed include the following:

- Meeting required standards the contractors had to produce a facility that is capable of meeting the specified quality outputs. If the facilities cannot provide the outputs specified in the contract, then the contractors are liable for any resulting costs.
- Cost overruns during construction where a project or site is not delivered on time or to budget, the contractor incurs the associated costs.
- Timely completion the contractor is paid only when the assets are fully operational.

The saving of £150 million is broadly equivalent to £9 million each year during the PPP contract. This reduces the equity return earned for operating the contracts from over 16%, to approximately 8.6%. This would represent a relatively low rate of return on equity.

The relatively high financing costs over the full life of the concession may have suggested a further material transfer of risk to the private sector partner. Our understanding is that the level of risk absorbed by the PPP contractors is no greater than the normal operating risks of Scottish Water or other water utilities. This would suggest that the adjusted rate of equity return (reflecting the delivery of an appropriate waste water treatment works) is high. Equity returns for the water and sewerage companies south of the border are typically just over 10%.

Refinancing

PPP contracts are complex and typically operate over an extended period. If there is significant initial capital expenditure the risk to the contractor is likely to be greater in the early part of the contract. The cost of borrowing will reflect this extra risk.

Most early PPP contracts did not share the benefits of any refinancing with the public sector partner. In October 2002, the Office of Government Commerce issued a Voluntary Code of Conduct. This code details how refinancing gains should be shared with the public sector partner if the contract does not specify the approach. The Code recommends that the public sector partner

¹²² AWG inherited its 33% stake in the Tay PFI following its acquisition of Morrison Construction plc in 2000. Morrison Construction was one of the original members of the winning consortia.

should receive 30% of the gain from refinancing. The Code recommends that contracts signed after 2002 should allocate 50% of any gain from refinancing to the public sector partner.

Although all of the PPP contracts are now operational we are not aware of any attempt to refinance these contracts. We would hope that it may be possible for customers to share the benefits of a possible refinancing of the projects since construction risks have been managed and the cost of capital also appears to be lower than it was when these contracts were originally let.

Summary

Scottish Water's nine PPP schemes have benefited its customers. The contracts delivered timely and efficient compliance with the Urban Waste Water Treatment Directive.

Our analysis suggests that the equity returns of the private sector partners are high. This is in part justified by the timely and efficient delivery of the initial capital expenditure required to upgrade these waste water treatment works. We are not aware of any efforts to refinance these contracts. Given that the works are now operational and the market cost of capital has fallen, we would hope that some benefits could accrue to customers from any such refinancing through lower bills.

In the next chapter we discuss the extra operating costs for PPP that we have made available in this draft determination. These costs should ensure that the objectives set by the Minister (for improvements at the PPP sites) can be delivered. The renegotiation of the contracts would seem to be a useful opportunity to improve the value for money offered to customers.

Section 3: PPP contracts Chapter 11: The way forward on PPP

Introduction

Previous chapters examined the background to Scottish Water's PPP contracts. We concluded that improved efficiency by the Scottish water industry has made the value for money provided to customers by these contracts less immediately obvious. We believe that Scottish Water takes every opportunity to improve value for money to customers of these contracts.

At the Strategic Review of Charges 2002-06 we noted that it might in future be appropriate to apply an efficiency target for PPP. We hoped that this would encourage Scottish Water to seek out, in a proactive way, any opportunities to reduce the costs associated with PPP.

In our methodology consultation¹²³ we again suggested that it might be appropriate to set an efficiency target for PPP. Scottish Water and some other industry stakeholders raised objections to the introduction of such a target. They claimed that it would not be possible to renegotiate the terms of the contracts. Other respondents indicated that they would support the introduction of measures that would put pressure on PPP contractors to continue to deliver value for money for customers.

We were somewhat disappointed by Scottish Water's response. There is no evidence that the lower market costs of capital, which currently apply, have been shared with Scottish Water's customers. However, we have decided not to include an efficiency target for PPP at this draft determination. Rather, we would encourage Scottish Water and the PPP contractors to improve the value for money of these contracts to Scottish customers over the next four years.

We have allowed additional investment at the PPP sites. We believe this could represent an important opportunity for Scottish Water to improve the value for money that these contracts represent¹²⁴. We will monitor carefully the cost of delivery of the Ministers' objectives at the PPP sites in our annual Investment and Asset Management and Customer Service reports. If the contracts do not deliver improved value for money then the new Water

Industry Commission may wish to establish an efficiency target at the next Strategic Review of Charges.

Consultation on the proposal to introduce an efficiency target

In our methodology consultation, we proposed to set an efficiency target for PPP by examining:

- the prices at which shares in the concessions are changing hands; and
- the operating and maintenance costs for the PPP projects, then using benchmarking techniques to assess the scope of any inefficiency.

In both instances we suggested that we should take account of the extent of the risk transfer that still remains with the PPP consortia.

We noted, however, that we would not apply an efficiency target to PPP if it could be demonstrated that it was not possible to renegotiate the existing contracts in any respect.

Stakeholder responses to our proposals

In line with our commitment to transparency, we posed a number of questions relating to this issue in our methodology consultation. The questions, and the responses we received, are summarised below.

1. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers? If not, why should customers be asked to pay more?

We received several responses to this question, presenting opposing opinions.

Some respondents said that the proposal to set an efficiency target for PPP contracts was an excellent initiative and would play an essential role in keeping PPP contractors under pressure to continue to deliver value for money for consumers.

¹²³ See our publication 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', Volume 4, Chapter 13.

¹²⁴ We discuss this in more detail in Chapter 14.

Scottish Water and Water UK criticised the proposal to set an efficiency target for PPP. In brief, they raised the following issues:

- The setting of an efficiency target could be considered as a breach of the Better Regulation Task Force principles of consistency and predictability.
- An attempt to renegotiate the PPP contracts could discourage potential suppliers from working with Scottish Water. This could increase the cost of any future PPP contracts.
- Setting an efficiency target could introduce regulatory risk, which would increase the cost of capital.
- If Scottish Water was unable to renegotiate the terms of the PPP contracts then extra out-performance of its regulatory contract would be required in order to compensate for the shortfall in this area.
- It would be unfair to ask Scottish Water to renegotiate the contracts because they were always intended to be long-term arrangements. The risks of the projects would have been averaged over the life of the projects.

We consider that these arguments have only limited merit.

In our view, it is possible to argue that we had not given sufficient notice of our intention to challenge the PPP contractors to deliver better value for money.

We have, therefore, decided to delay the decision about setting an efficiency target for PPP to the next regulatory control period. At the current time, we are minded to set such a target if Scottish Water and the PPP contractors cannot demonstrate that the contracts continue to represent good value for money to customers.

We do not believe that arguments relating to the future cost of PPP contracts are valid. Scottish Water should only enter into a PPP contract if it is cheaper than all alternative options or it is the only effective way of delivering the investment. If Scottish Water's own

efficiency improves to the point where it is broadly similar to that of the companies south of the border, then customers can be assured that value for money is being achieved. It is likely that if a private company sees an opportunity to earn a reasonable return by providing a service more cheaply than Scottish Water is able to do for itself, then it is still likely to pursue this opportunity. Such opportunities may arise as a result of economies of scale or scope and through the use of leading edge technologies.

Scottish Water's cost of capital is set with reference to the cost of public debt. This reflects the decision by Scottish Ministers to make this cheap financing available to Scottish Water. An increase in 'regulatory risk' would not have an impact on Scottish Water's cost of capital since public borrowing rates are set with reference to risk-free government debt. If the PPP contractor has a higher cost of capital, this would simply reduce the attractiveness of PPP relative to an 'own build' option for Scottish Water.

Clearly, if it is not possible to renegotiate the contracts, then there is nothing that Scottish Water can do without the agreement of the concession holder. We recognised this in our methodology. However, we also believe that the customers of the Scottish industry ought to receive value for money. This will require Scottish Water to ensure that contractors deliver the best possible value for money.

2. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?

It would appear that many industry stakeholders do not think that it is appropriate to assess the value for money of the PPP contracts. They argue that they are in effect 'sunk' costs that should not be revisited. We believe, however, that the contractor should be held to account for the level of service that he provides.

Other respondents to our consultation suggested that we should take any opportunity to ensure that customers receive value for money.

Monitoring the PPP contracts

Until relatively recently we were not concerned about the value for money provided by the PPP contracts. As a result we have not sought to monitor these contracts in detail. Efficiency improvement by Scottish Water and the need to invest additional capital at PPP sites makes it important that we monitor the performance of the PPP contracts much more closely. We will develop our annual return to collect detailed information on compliance, levels of service and the costs of PPP.

Why we have decided not to implement an efficiency target

We have decided not to introduce an efficiency target at this draft determination. As noted above, we believe that we may not have signalled our intentions sufficiently well in this regard.

The investment objectives set out by Ministers will require additional investment at some of the PPP sites. We believe that this may represent an opportunity for Scottish Water to improve the value for money of the PPP contracts.

Additional investment at PPP sites

In its second draft business plan, Scottish Water identified a total investment requirement of some £66 million (2003-04 prices) at 3 PPP waste water treatment sites. This investment appears to relate to odour and unsatisfactory discharges.

The total operating costs associated with this investment were £1.4 million (2003-04 prices) per year.

We have reviewed the proposed investment. We have reduced this investment to reflect the opportunity for efficiency. We have also reduced the scope of what is required to reflect the advice that we have had from the Reporter and our more detailed review of the capital programme.

We have calculated an annual PPP operating cost using the following assumptions:

- the weighted average cost of capital is the same as that allowed by Ofwat to the companies south of the border;
- the debt to capital value of the project is 90%;
- the contract length of the existing PPP is not changed;
- the total efficient operating costs are 2% of the assessed capital investment cost. This amounts to £1 million per year (2003-04 prices);
- the total capital costs are £50 million (2003-04 prices); and
- we have assumed that the output is delivered at the start of the fourth year of this regulatory control period.

The costs of the amendments to the PPP contract are set out in Table 11.1. These estimates do not assume that Scottish Water has been successful in reducing the underlying costs of its PPP contracts. There may therefore be an opportunity to deliver the Ministers' objectives for a lower cost.

Table 11.1: Allowed for additional PPP costs 2006-10

	2006-07	2007-08	2008-09	2009-10
Additional PPP costs allowed for	£1.0m	£1.0m	£3.2m	£7.0m

Summary

Scottish Water's improved operating cost efficiency, and a reduction in the real cost of capital, has made the value for money that is now provided by the PPP contracts less immediately obvious. Our analysis suggests that the return enjoyed by the consortia is higher than could reasonably have been expected when they were first set up. This reflects the overall operating cost improvement of the water and sewerage industry in Great Britain and the reduction in the real cost of capital.

Following our methodology consultation, we have decided not to apply an efficiency target to the PPP contracts in this draft determination. We believe that the additional investment that is required at PPP sites could

represent a useful opportunity for Scottish Water to improve the value for money to customers of these contracts. We have allowed for £7 million in annual operating costs from 2009-10 to cover the additional costs of the PPP consortia in delivering the Ministers' objectives. This allowance does not assume that Scottish Water is successful in negotiating a share of the lower finance costs of the PPP operators for its customers. As a result, there may be scope for out-performance in this area.

We also expect Scottish Water to manage the operation of the PPP contracts in such a way that maximises their value for money for customers. Our scrutiny and monitoring of the PPP projects will increase for the next regulatory control period and if we do not see an improvement in the value for money of these contracts we may seek to establish an efficiency target at the next Strategic Review of Charges.

Section 4: Funding capital expenditure Chapter 12: An introduction to RCV

Introduction

In Chapter 2 we explained that we have moved towards the RCV method of price setting at this draft determination. We highlighted that we do not believe that the RCV approach to price setting will have any immediate material impact on the prices faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure.

This chapter explains how the RCV method of price setting works. In Chapters 18 and 21 we discuss how we set the initial RCV and how we made sure that our conclusions were reasonable.

The RCV method of price setting

Scottish Water will receive an appropriate rate of return on its RCV. The RCV is a proxy for the current value-in-use of Scottish Water's above-ground asset base. This value will change over time to reflect the ageing (use) of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets. The current below-ground assets (infrastructure) are considered to be assets that are required in perpetuity and are therefore not included in the RCV. The cost of maintaining and replacing these assets is met through the annual infrastructure renewals charge (IRC).

The revenue that Scottish Water should be allowed is calculated as follows:

Return allowed on the regulatory capital value

allowed for operating costs

temperature assets

the infrastructure renewals charge
the costs of PPP contracts
tax
tax
current cost working capital adjustment

Return allowed on the regulatory capital value

The level of the RCV does not, by itself, impact on the prices that customers pay. It is the cash return allowed

on the RCV that determines the level of prices. When Scottish Water invests in new assets, the efficient value of that asset is added to the RCV and begins to earn a return. This increases prices to customers. At the same time, the annual depreciation charge will reduce the RCV. A return is paid only for the value of the non-depreciated portion of an asset included in the RCV. The value of the RCV is also adjusted annually to take account of inflation.

The second element of the calculation of the allowed return on the RCV is the rate of return. In the private sector model this is referred to either as the cost of capital or the weighted average cost of capital. We explain the factors that we have taken into account in setting an appropriate rate of return for Scottish Water in Chapter 19. Chapter 19 also explains why the rate of return that we allow to Scottish Water is lower than the cost of capital set by Ofwat for the water and sewerage industry south of the border.

We multiply the rate of return by the RCV (adjusted in future years to reflect investment and depreciation) to establish the cash return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created and which are providing a benefit to customers. Only such assets are included in the regulatory capital value.

Allowable operating costs

The allowed level of revenue includes an appropriate allowance for operating costs. Our assessment of these costs takes into account inflation, the scope for efficiency and an allowance for efficient new operating costs. It is important to highlight that our assessment of efficiency includes a detailed comparison of both the relative level of cost incurred and the relative level of service delivered.

Operating costs comprise a significant proportion of a customer's bill and we pay particular attention to ensuring that these costs are no higher than they need to be.

Depreciation and the infrastructure renewals charge

Under the RCV approach we allow for asset costs in two ways; that is, (a) the allowed cash return on the RCV and (b) an allowance for depreciation and the infrastructure renewals charge (IRC). The allowance for depreciation and the IRC ensure that sufficient funds are available to replace assets that are at the end of their useful lives.

Depreciation is an accounting charge, rather than a cash cost. The cash cost is incurred when the asset (the use of which is recognised in the depreciation charge) is purchased. Scottish Water's depreciation charges are included as allowed costs in order to smooth the cost of replacing assets when their useful lives are over. The costs of replacing Scottish Water's assets are reflected in the IRC (for infrastructure assets) and as a separate depreciation charge (for non-infrastructure assets).

The IRC covers the cost of maintaining, refurbishing and replacing underground assets. Like the water industry in England and Wales, Scottish Water has adopted the accounting convention of infrastructure renewals. This means that the infrastructure network (mainly comprising underground pipes, sewers, etc) is treated as a single asset to be maintained in perpetuity, rather than a collection of assets each with its own life and maintenance requirements. It is reasonable to include the IRC in the price paid by customers as it reflects the cost of the current use of the underground infrastructure. We discuss this issue in detail in Chapter 13.

Current cost depreciation (CCD) of non-infrastructure assets (mainly those assets found above the ground) is based on Scottish Water's own estimate of its depreciated modern equivalent asset value. New assets installed during the period will be depreciated on the basis of a standard set of expected asset lives.

The costs of PPP contracts

Scottish Water provided us with detailed information about the PPP costs it expects to incur during the regulatory period. PPP contracts effectively swapped initial capital costs, financing and maintenance costs and

operating costs over the life of an asset, for a series of annual payments. We have scrutinised these costs carefully. Our analysis of the appropriate level of these PPP costs was allowed for in our calculation of revenue. PPP contracts were discussed in Chapters 8 to 11.

Benefits from the RCV approach

Moving towards the RCV approach to price setting will have several key benefits. Firstly, it should provide a basis for incentives for management that will be transparent, published in advance and objectively measurable. These incentives should encourage management to deliver capital projects in a timely and efficient way, meeting efficiency targets and thus protecting customers. This is because Scottish Water will only earn a return once a project has been delivered and the efficient cost of that project is added to the RCV. If Scottish Water delivers projects more or less quickly than expected, then the allowed return would be adjusted in the next regulatory period. This should give customers more confidence that the benefits promised in the investment programme will be delivered on time.

A further benefit of our move towards the RCV approach is that it will allow us to compare financial ratios on a like-for-like basis with other regulated utilities, and so gain a better indication of financial sustainability. This approach will improve transparency when comparing the financial ratios of the water industry in Scotland with those in England and Wales.

There is also a clear incentive to deliver the capital programme efficiently, because only the agreed efficient cost is added to the RCV. This should ensure that customers are not asked to meet the costs of inefficiency. Inefficiency in the delivery of any project will have to be matched by out-performance of the regulatory contract in another area. If there is no corresponding out-performance, Scottish Water would have to increase its debt 125 or delay investment outputs. This could increase the proportion of debt to RCV. In subsequent years, either there is a matching out-performance of the earlier inefficiency (and the additional borrowing costs) or there would have to be a further increase in debt equivalent to the borrowing costs.

¹²⁵ Assuming that the Scottish Executive agreed to make contingency funds available.

Such inefficiency should not impact on customers. The price paid by customers would still be determined by the allowed cash return on the RCV, the depreciation and IRC allowances, and the operating costs (including PPP). This calculation is not changed by a failure to meet the terms of the regulatory contract. As we have explained previously, it would be a matter for the Scottish Executive to decide how to deal with any underperformance against the regulatory contract that is not outside the control of managers.

The onus is therefore on the management of Scottish Water and its owner, the Scottish Executive, to ensure that agreed levels of service and investment are delivered. We will be able to monitor progress by comparing the debt to RCV ratio that was expected at the start of the regulatory period relative to that which is reported at the end of each year. This should make assessments of performance much more transparent.

In the longer term, an important feature of the RCV method of price setting is that it does not require the regulator to determine how much Scottish Water should seek to borrow or how much the Scottish Executive should seek to lend.

If debt increases as a proportion of the RCV, future customers will face either higher prices or a service that is less able to absorb operational or legislative shocks. If Scottish Water is allowed to borrow more money, this will increase interest costs. The extra cash resources available may cause the regulatory contract to be breached, but this will not impact on current prices because they will take into account only an efficient allowance for costs. If the extra money were efficiently invested in new assets, then customers would start to pay for these improvements at the start of the next regulatory period. There would be an onus on Scottish Water to demonstrate that the extra spending was necessary, appropriately timed and efficient before customers would have to pay.

If debt decreases as a proportion of the RCV, customers in subsequent years will benefit. If Scottish Water is allowed to borrow less money, interest costs would fall but it would also be difficult to deliver all of the benefits

of the investment programme. This would result in a lower RCV in future years and hence a lower allowed cash return. This would reduce the prices paid by customers in the future, but is also likely to mean a reduction in the level of service and environmental/public health compliance that customers currently enjoy.

Stakeholders can reasonably expect the RCV to increase in line with the profile that is established at the start of the regulatory period. As a result, monitoring the RCV and the ratio of total debt to RCV should provide stakeholders with a useful indicator of the financial performance of the water industry in Scotland.

Summary

We believe that our move towards the regulatory capital value method of price setting will improve the transparency of the price setting process. This will bring benefits to customers. However, our move towards the RCV method of price setting will not immediately or materially impact on the prices paid by customers, the resources available to Scottish Water or the amount of public expenditure required.

Section 4: Funding capital expenditure Chapter 13: Setting the allowed level of capital maintenance and an appropriate infrastructure renewals charge

Introduction

Scottish Water's regulatory return in 2004 estimated that the replacement cost of its water and waste water assets was some £26.7 billion¹²⁶.

In this chapter we discuss our assessment of the capital maintenance that Scottish Water should require in order to maintain the serviceability ¹²⁷ of its current asset base.

The water and waste water industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc). The diminishing value of these two categories of assets as they wear out is treated differently in the industry.

In this chapter we also set out our views on what is an appropriate level for the infrastructure renewals charge (IRC). The IRC should be the long run average cost of maintaining the underground network of water mains and sewers. In Chapter 16 we discuss the 'depreciation charge,' which recognises the value that has been received from the use of the non-infrastructure asset base in any one year.

The actual amount that Scottish Water spends on its infrastructure assets is termed infrastructure renewals expenditure (IRE). The amount of IRE in any one year may not be the same as the IRC.

This chapter covers the following issues:

- The Ofwat capital maintenance econometric models that we have used in our assessment of the level of capital maintenance that Scottish Water should require to maintain the serviceability of its assets. We divide this expenditure into above-ground and below-ground capital maintenance.
- The process that we have applied to determine an appropriate level of capital maintenance investment for Scottish Water.

- The infrastructure renewals charge and infrastructure renewals expenditure, and how these two concepts impact on the price that is paid by customers.
- The IRC that was claimed by Scottish Water in its business plan.

Due to the particularly technical nature of the use of capital maintenance econometrics, we asked Ofwat to review our description of our approach. This chapter includes their comments.

How Ofwat's operating expenditure econometric models developed

Ofwat uses econometric modelling in its assessment of the relative efficiency of the capital maintenance expenditure of the water and sewerage companies in England and Wales. This method uses statistical analysis to establish relationships between the capital maintenance expenditure undertaken by companies and a number of factors that might drive costs which are common to all companies. Once the relationships have been established, the models can be used to predict the appropriate level of expenditure for each company. This predicted expenditure can then be compared directly with the companies' actual expenditure. Information to allow this comparision is collected from each company in a systematic way.

The capital maintenance econometric models that are used by Ofwat were first used for its 1999 price review and were published in April 1998¹²⁸. In 2003, Ofwat conducted a detailed review of the models, in consultation with industry representatives, in preparation for its 2004 price review. In the review, Ofwat worked with Professor Mark Stewart from the University of Warwick, who provided independent verification of the models. Ofwat published the final form of the capital maintenance econometric models for the 2004 price review in January 2005¹²⁹.

The capital maintenance models

Each of the nine capital maintenance models includes a relationship between the capital maintenance

¹²⁶ Scottish Water Annual Return, June 2004, Table H.

¹²⁷ The concept of serviceability in relation to Quality and Standards III is discussed in Chapter 5.

¹²⁸ 'Assessing the scope for future improvements in water company efficiency: a technical paper', Ofwat, 30 April 1998.

^{129 &#}x27;Water and sewerage service unit costs and relative efficiency 2003-04 report', Ofwat, January 2005.

expenditure reported by the companies and the factors that might drive costs. The factors must have a clear impact on costs but should also be as far outside the discretionary control of the management of the company as possible.

The factors that might drive costs that are used within the econometric models are known as explanatory factors. Ofwat takes great care to define the potential explanatory factors that might prove to be useful in the econometric analysis. Information for a range of possible factors is systematically collected from each company to ensure that robust comparisons can be drawn. The process of establishing the econometric models looks at the correlation between expenditure and different combinations of explanatory factors, and selects the best explanatory factors for each model.

The models chosen by Ofwat for the 2004 price review were established using the potential explanatory factors from the England and Wales companies and did not include any data from Scottish Water or other sources.

When carrying out its econometric relative efficiency assessment, Ofwat provides each company with the opportunity to identify 'special factors' that apply to them and which might distort conclusions drawn from the comparison expenditures predicted by the model and the actual company expenditure in that area. The opportunity to assess and include special factors helps to reduce the scope for any potential inaccuracies in the process.

The models themselves take different forms. These are summarised in Table 13.1.

Table 13.1: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Unit cost	Total connected properties
Water distribution infrastructure	Log linear	Length of main; total connected properties
Water distribution non-infrastructure	Log linear	Pumping station capacity; water service reservoir and water tower storage capacity
Water management and general	Log linear	Billed properties; proportion of billed properties that are non-household
Sewerage infrastructure	Log linear	Length of sewer; number of combined sewer overflows; proportion of critical sewers
Sewerage non-infrastructure	Unit cost	Number of pumping stations
Sewage treatment	Log linear	Total load; total number of works
Sludge treatment and disposal	Unit cost	Total weight of dry solids
Sewerage management and general	Unit cost	Billed properties

Each of these models is described in detail below.

Water resources and treatment

This model estimates the costs of maintaining those assets from which water is sourced (eg reservoirs, dams and aqueducts) and where water is treated (eg water treatment works and associated pumping stations). The model is based on the premise that capital maintenance expenditure increases uniformly with company size; that is, there are constant returns to scale. In the model, the number of connected properties is used as a surrogate for company size.

The model shown in Table 13.2 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.2: Ofwat's model for water resources and treatment capital maintenance expenditure

Water resources and treatment			
This is a unit cost model. Each company's average annual water resources and treatment capital maintenance expenditure is divided by the total connected properties. This is then compared with the weighted average industry cost.			
£m/million connected properties Weighted average industry cost = 8.854			
Number of observations: 22			

Water distribution infrastructure

This model estimates the costs of maintaining the network of water mains. The main cost driver in this model is the log of connected properties per length of main.

The model shown in Table 13.3 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.3: Ofwat's model for water distribution infrastructure capital maintenance expenditure

Water distribution infrastructure				
Modelled cost	Log to base e of (annual average water distribution infrastructure functional expenditure (£m), divided by length of main (km))			
Explanatory variables	Coefficient Standard error			
Constant	-5.104	0.608		
Log to the base e of (total number of connected properties (000s) divided by total length of main (km))	0.762	0.225		
Form of model	Log to base e of (annual average water distribution infrastructure functional expenditure (£m), divided by length of main (km)) = -5.104 + Log to the base e of (total number of connected properties (000s) divide by total length of main (km)) x 0.762			
Statistical indicators	Number of observations: 22	R ² : 0.364		

Water distribution non-infrastructure

This model estimates the costs of maintaining the non-infrastructure assets related to water distribution, such as service reservoirs, pumping stations and meters. The model recognises that capital maintenance expenditure increases with pumping station capacity and water storage capacity.

The model shown in Table 13.4 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.4: Ofwat's model for water distribution non-infrastructure capital maintenance expenditure

Water distribution non-infrastructure				
Modelled cost	Log to base e of (annual average water distribution non-infrastructure functional expenditure (£m), divided by pumping station capacity (kW))			
Explanatory variables	Coefficient Standard error			
Constant	-6.203	0.514		
Log to the base e of (water service reservoir and water tower storage capacity (MI/d)/ pumping station capacity (kW))	0.740	0.200		
Form of model	Log to base e of (annual average water distribution non-infrastructure functional expenditure (£m), divided by pumping station capacity (kW)) = -6.203 + ln (water service reservoir and water tower storage capacity (MI/d)/pumping station capacity (kW)) x 0.740			
Statistical indicators	Number of observations: 22	R ² : 0.407		

Water management and general

This model estimates the costs of maintaining those assets that are used in the management function of the water business, such as IT equipment, buildings and vehicles. The model relates costs to the size of the company (using the number of billed properties as a surrogate for company size). It recognises that costs increase with a greater proportion of non-household customers.

The model shown in Table 13.5 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.5: Ofwat's model for water management and general capital maintenance expenditure

Water management and general					
Modelled cost	Log to base e of (annual average water management and general expenditure (£m), divided by billed properties (000s))				
Explanatory variables	Coefficient Standard error				
Constant	-5.842	342 0.420			
Proportion of billed properties that are non-household	12.766	5.513			
Form of model	Log to base e of (annual average water management and general expenditure (£m), divided by billed properties (000s)) = -5.842 + proportion of properties that are non-household x 12.766				
Statistical indicators	Number of observations: 22 R ² : 0.211				

Sewerage infrastructure

This model estimates the costs of maintaining the sewer network. The model recognises that capital maintenance expenditure on sewerage infrastructure increases with company size and uses sewer length as a surrogate for company size. Combined sewers are recognised as having higher maintenance costs than foul sewers; the number of combined sewer overflows is used in the model as a proxy for the length of combined sewers. In addition, the model takes account of the higher maintenance cost of critical sewers (relative to non-critical sewers).

The model shown in Table 13.6 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.6: Ofwat's model for sewerage infrastructure capital maintenance expenditure

Sewerage infrastructure				
Modelled cost	Log to base e of (annual average sewerage infrastructure expenditure (£m), divided by th total length of sewer (km))			
Explanatory variables	Coefficient	Standard error		
Constant	-5.606	0.356		
Log to the base e of (the number of combined sewer overflows divided by the total length of sewer (km))	0.379	0.059		
Log to the base e of (proportion of critical sewers)	0.441	0.210		
Form of model	Log to base e of (annual average sewerage infrastructure expenditure (£m), divided by the total length of sewer (km)) = -5.606 + log to the base e of (the number of combined sewer overflows divided by the total length of sewer (km)) x 0.379 + log to the base e of (proportion of critical sewers) x 0.441			
Statistical indicators	Number of observations: 63	R ² : 0.427		

Sewerage non-infrastructure

This model estimates the costs of maintaining the non-infrastructure assets of the sewerage service, largely sewage pumping stations. The model is based on the premise that capital maintenance expenditure increases uniformly with the number of pumping stations.

The model shown in Table 13.7 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.7: Ofwat's model for sewerage noninfrastructure capital maintenance expenditure

Sewerage non-infrastructure			
This is a unit cost model. Each company's average annual sewerage non- infrastructure capital maintenance expenditure is divided by the total number of pumping stations. This is then compared with the weighted average in			
£m/number of pumping stations Weighted average industry cost = 2.956 (000s)			
Number of observations: 10			

Sewage treatment

This model estimates the costs of maintaining sewage treatment works. The model recognises that maintenance costs increase with the volume of sewage that is treated. In addition, the model takes into account the economies of scale of maintaining a few large works relative to maintaining a large number of smaller works.

The model shown in Table 13.8 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.8: Ofwat's model for sewage treatment capital maintenance expenditure

Sewage treatment				
Modelled cost	Log to base e of (annual average sewage treatment functional expenditure (£m), divided by the total load received at sewage treatment works (kg BOD5/day)			
Explanatory variables	Coefficient Standard error			
Constant	-8.270	0.282		
Log to the base e of (the total number of works divided by total load received at sewage treatment works (kg BOD5/day))	0.165	0.041		
Form of model	Log to base e of (annual average sewage treatment functional expenditure (£m), divided by the total load received at sewage treatment works) = -8.270 + log to the base e of (the total number of works divided by total load received at sewage treatment works) x 0.165			
Statistical indicators	Number of observations: 60	R ² : 0.214		

Sludge treatment and disposal

This model estimates the costs of maintaining the assets that are used for sludge treatment and disposal. The model is based on the premise that capital maintenance expenditure increases uniformly with the total weight of dry solids disposed of.

The model shown in Table 13.9 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.9: Ofwat's model for sludge treatment and disposal capital maintenance expenditure

Sludge treatment and disposal		
This is a unit cost model. Each company's average annual sludge treatment and disposal capital maintenance expenditure is divided by the total weight of dry solids disposed of. This is then compared with the weighted average industry cos		
£000/weight of dry solids (ttds)	Weighted average industry cost = 67.894	
Number of observations: 10		

Sewerage management and general

This model estimates the costs of maintaining those assets that are used in the management function of the sewerage business, such as IT equipment, buildings and vehicles. The model relates costs to the size of the company and uses the number of billed properties as a surrogate for company size.

The model shown in Table 13.10 was published in January 2005 and was developed from 1997-98 explanatory variables and six-year average expenditure (1998-99 to 2003-04) for the water companies in England and Wales.

Table 13.10: Ofwat's model for sewerage management and general capital maintenance expenditure

Sewerage management and general		
This is a unit cost model. Each company's average annual sewerage management and general capital maintenance expenditure per billed property is compared with the weighted average industry cost.		
£m/million billed properties Weighted average industry cost = 7.619		
Number of observations: 10		

Criticisms of the capital maintenance econometric models

As part of its first draft business plan, Scottish Water submitted a number of papers by academics and consultants which criticised the Ofwat econometric models. The majority of the papers submitted by Scottish Water were written for the water and sewerage companies in England and Wales or for Water UK, the industry trade body. The majority of the papers were also submitted to Ofwat, two of them at the 1999 price review¹³⁰ and the remainder in the run up to the 2004 price review. Only one paper specifically addressed the use of the econometric models in Scotland.

It is worth noting that although the papers are critical of the models used by Ofwat, none of them contains proposals for alternative ways to assess the appropriate level of capital maintenance.

The papers submitted by Scottish Water focus on the operating cost econometric models. We address these criticisms in Volume 6. However, Scottish Water also raised a number of issues that are relevant to our use of Ofwat's capital maintenance econometric models. These issues were as follows:

- the choice of explanatory factors and type of model;
- the poor explanatory power of the models;
- the susceptibility of the econometric models to inconsistencies in information;
- changes in the models' specification over time;
- the assumption that the residual represents inefficiency only and that this can then be used to set efficiency targets for the water and sewerage companies;
- the models are backward looking and reflect only historic maintenance levels; and
- the application of models to Scottish Water that were derived using information from the companies south of the border.

¹³⁰ Davidson, "Ofwat efficiency assessment using economteric models: a comment" (1999) and Montgomery Watson "Water distribution cost drivers" (1999)

We address each of these issues in turn below.

The choice of explanatory factors and type of model

The most common criticism of the models is that they do not accurately reflect the true cost drivers in the water and sewerage industry. Scottish Water cites papers by NERA¹³¹ and Professor John Cubbin¹³² of City University, which argue that the capital maintenance models omit key cost drivers such as asset age and condition.

Ofwat consulted in 2003 with industry representatives through a liaison group set up with the water industry's trade body, Water UK. Ofwat explains 133 that it reviewed and tested the suggestions and alternative models put forward by the industry. It found that none of these suggestions or models improved the explanatory power of the models sufficiently to warrant a change.

Ofwat remains confident that its models are fit for purpose and that it is not misusing the information it collects. We note that in 2003-04, Ofwat allowed 19 company claims for special factors. We believe that this allows more explanatory factors, specific to individual companies, to be taken into account. We are therefore not persuaded by the views expressed by NERA and Professor Cubbin.

The poor explanatory power of the models

Scottish Water argued that the capital maintenance econometric models have been the subject of especially heavy criticism, as the statistical explanatory power of these models is particularly poor. Scottish Water cited comments made by the Competition Commission in its reviews of the price caps for Mid Kent Water and Sutton & East Surrey Water in August 2000, where it noted that it had: "some reservations concerning the consistency and reliability of the capital maintenance econometric models".

We note these concerns but it is important to recognise that the purpose of Ofwat's econometric models is to understand the impact of factors that are outside the control of management. The models therefore do not explicitly consider key factors that affect costs, such as the maintenance policy of the business, the extent to which the business accepts risk, its employment policies, choice of suppliers and so on. All of these factors are within management control. The models are based on explanatory factors that are as far outside the discretionary control of management as possible and only test the impact of these external factors.

The susceptibility of the models to inconsistencies in information

Scottish Water also argued that there is substantial scope for differences in cost allocation practices both for individual companies over time and between companies. This would affect the reported expenditure used in the modelling process. However, Scottish Water does recognise that there has been considerable progress in ensuring that cost allocation policies in England and Wales are consistent. Scottish Water also comments that the models do not appear to take account of tradeoffs between, for example, different time periods or cost and quality. Scottish Water claims that this could artificially change or bias results.

Ofwat has carefully reviewed the companies' accounting and cost allocation practices, and has made specific adjustments where necessary to correct for differences between the companies' reported expenditure. Regulatory accounting guidelines have been in place for well over a decade in England and Wales, and the scope for material variations in accounting practice between the companies and over time is likely to be small. The Reporter for each company is required to review and report on the cost allocation policies and practices of the companies south of the border.

Trade-offs may indeed be useful ways in which companies can optimise overall 'whole life' costs. Ofwat's approach clearly defines the separate assessment of capital and operational cost efficiency and the optimisation for whole life costs is not a specific target of the assessment, since this should be built into the solutions that the company chooses to pursue. This is consistent with the selection of explanatory factors outside the control of management.

¹³¹ NERA 'An investigation into the robustness of Ofwat's comparative efficiency analysis of capital maintenance expenditure', 1999, a report for Water UK.

¹³² Professor John Cubbin 'Assessing Ofwat's efficiency econometrics', 2004.

¹³³ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004, page 250.

Changes in the models' specification over time

Scottish Water noted that Ofwat had recently changed a number of its capital maintenance models. Scottish Water argues that cost relationships in the water and sewerage sector can be expected to change only slowly over time unless exceptional technological progress takes place. Scottish Water considers that changes to the models would suggest that the statistical power of these models has weakened over time. It concludes that the former models must have been inaccurate.

We are not persuaded by this line of argument. We accept that technology in the water and sewerage industry may change only relatively slowly; however, there are a number of factors that are likely to change during a five-year regulatory control period. For example, priorities for maintenance investment are likely to change as companies understand more about the condition and performance of their assets over time. Companies are gaining greater knowledge about the impact of their assets on customer service and on compliance with drinking water and environmental standards. Moreover, the expectations of customers are becoming more demanding and quality standards are getting tighter. These changes are likely to affect how companies target investment, and may affect the level of investment they need to make. The companies' use of the UKWIR common framework approach may also change the cost structure of the industry for capital maintenance.

Interpretation of the residual 134

Scottish Water argues that the residual from the econometric analysis should not be interpreted wholly as representing efficiency. In a report for Water UK¹³⁵, Professor Cubbin breaks the residual down between six factors: omitted variables, poor proxy, sampling error, measurement error, mathematical form and efficiency. The author carries out his analysis for each of the nine capital maintenance expenditure models. He concludes that for the capital maintenance expenditure models, efficiency accounts for between 14% and 28% of the residual on the water service, and for between 20% and 34% of the residual on the sewerage service.

Ofwat reviewed Professor Cubbin's paper and concluded that uncertainties of this scale are unlikely under normal operating circumstances¹³⁶. Ofwat also pointed out that it employs other mechanisms and checks which ensure that potential distortion and uncertainty are allowed for. Ofwat has taken a number of steps to ensure that the models are used appropriately. It carefully adjusts the expenditure to allow for several identifiable distorting factors and makes an allowance for uncertainty. It also allowed 19 claims for companyspecific special factors in 2003-04. These steps address any issues concerning omitted variables. Companyspecific special factors may reduce the impact of the econometric assessment on a company by a significant amount. The use of special factors may significantly reduce the assessed efficiency gap.

Similarly, Ofwat does not set efficiency targets to close 100% of the assessed efficiency gap. At the 2004 price review, Ofwat assumed that companies could move at least 40% towards the benchmark company as established by the capital maintenance econometric relative efficiency assessment. The remaining 60% is viewed by Ofwat as being available to the company as an incentive to beat the target assumed in price limits. Incentive-based regulation seeks to reward a management that can out-perform its regulatory contract. There would be little opportunity to reward companies if targets were set at the theoretical maximum scope for improvement.

We have carefully reviewed Scottish Water's claims for special factors in capital maintenance. However, we are not persuaded that the evidence presented in the second draft business plan warrants an adjustment to the results of the econometric comparison. We have used the models to estimate an initial assessment of the level of funding that is likely to be required to maintain the asset base.

The models are backward looking and reflect only historic maintenance levels

Scottish Water states that the econometric models are backward looking, and therefore reflect historic

¹³⁴ The residual is the difference between a companies reported actual costs and the costs predicted by the econometric models.

Professor John Cubbin, 'Assessing Ofwat's efficiency econometrics', March 2004.
 Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

maintenance levels. It notes that Ofwat's price limits set in 2004 allowed significant increases in funding for capital maintenance. Ofwat allowed companies additional funding in price limits to the extent that companies could justify increases through their application of the UKWIR common framework approach. We have adopted an approach for assessing Scottish Water's application of the common framework that is consistent with Ofwat's. We discuss this approach later in this chapter.

The application of models derived from England and Wales information to Scottish Water

Only one of the papers submitted by Scottish Water specifically addresses our use of the Ofwat models in regulating Scottish Water. This paper 137, by Professor Cubbin, is an update of the earlier paper that he wrote for Water UK, which we discussed above. The author does not specifically address the use of the capital maintenance models in Scotland but concludes that using operating cost models to regulate Scottish Water could introduce errors into the results. He claims that this is because the models were developed specifically for the companies in England and Wales. His criticisms are largely addressed through our consideration of special factors.

Special factors claimed by Scottish Water

Scottish Water has presented claims for capital maintenance special factors relating to its large number of small water service assets. We are not persuaded that this puts Scottish Water at a disadvantage. Many of these smaller assets are likely to be more basic and to require considerably less maintenance.

Scottish Water claims that it is penalised in the econometric model for water distribution non-infrastructure because of its large number of small capacity service reservoirs and towers, relative to England and Wales. The model predicts costs as a function of pumping station capacity and water service reservoirs and water tower storage capacity. However, the evidence that Scottish Water presents to support its

claim also shows that it is has significantly more service reservoirs and water tower storage capacity, relative to its customer base, than any company in England and Wales. Scottish Water has provided no justification of this greater storage capacity. Taking this into account, the model rewards Scottish Water rather than penalising it.

We would have liked to re-estimate the Ofwat capital maintenance models including explanatory variable and expenditure information from Scottish Water. We were not able to do this because the necessary historic information from Scottish Water does not exist or is not sufficiently reliable. In particular, we lack historic information on the asset base and on the amount of capital spending that is specifically directed at maintenance.

Scottish Water also argued that Scotland has a very different mix of assets from the companies in England and Wales, with more small assets, and an overall higher value of assets to maintain per customer. However, the Ofwat capital maintenance econometric models use information largely about the type and scale of the asset base as explanatory variables to determine predicted expenditure. None of the models use asset value as an explanatory variable. For example, the models take explicit account of the lengths of water mains and sewers maintained by Scottish Water. Mains and sewers comprise the majority of Scottish Water's asset values.

Scottish Water provided us with its analysis of capital maintenance requirements based on a comparison of total asset values with England and Wales. In our view, the values assigned by Scottish Water are not yet sufficiently reliable or consistent with England and Wales to support such analysis. It is highly unlikely that the inclusion of robust asset values from Scottish Water as possible explanatory variables will lead to the adoption of econometric models that include asset value. In any case, the requirements for maintenance investment will depend on the type of asset, rather than its total value, a factor that the models take into account.

Our view remains that the Ofwat models are robust and fit for our purpose. We believe that the fact that the Ofwat models have been successfully applied to companies as

¹³⁷ Professor John Cubbin, 'How appropriate are Ofwat's efficiency models for Scotland?', October 2004.

different as Severn Trent Water¹³⁸ and South West Water¹³⁹, and to both large¹⁴⁰ and small water only companies¹⁴¹, confirms that the models can reasonably be applied in Scotland.

How we assessed capital maintenance investment requirements

In assessing Scottish Water's capital maintenance requirements in 2006-10 we have taken account of the various elements of the four-stage process that Ofwat used in its 2004 price review¹⁴²:

 Stage A Maintaining serviceability to customers to date.

We have made an assessment of the level of expenditure required to maintain current levels of service to customers and the environment as required by the Ministerial Guidance.

In the approach used by Ofwat, this stage takes into account evidence of historic levels of capital maintenance expenditure, and current serviceability and asset performance information. For our assessment of Scottish Water's proposals, we have not been able to rely on information on historic expenditure, serviceability measures or asset performance. This is because the information available is not adequately robust to use in the manner that Ofwat's approach demands. We have therefore used an alternative approach based on the capital maintenance econometric models developed by Ofwat. We have used these models to derive the future expenditure we consider is appropriate at Stage A.

Stage B Is the future period different?

This stage examines the forward-looking element of capital maintenance expenditure. In essence, this step considers how much more (or less) capital maintenance expenditure (compared with the Stage

A assumptions) should be required in the future due to changes (in, for instance, the rate of deterioration of assets, or changes in other risks to service failure) that have occurred, are occurring or are likely to occur. In the December 2004 determination, Ofwat used an assessment based on the principles set out in the UKWIR common framework and we have assessed Scottish Water's proposals in a similar manner.

Stage C Scope for improvements in efficiency.

Ofwat derives efficiency targets in Stage C that generally reduce the expenditure assumptions for price limits. As we have used an alternative methodology to derive the amount of expenditure at Stage A, we have also used a different approach in Stage C. We have, however, used Ofwat's cost base methodology to underpin our assumptions. We have assessed by how much Scottish Water can improve its efficiency in capital maintenance over the four-year period.

• Stage D Impact of the improvement programme.

This stage takes into account the overlaps between the improvement programme and the base capital maintenance programme.

We discuss our approach in greater detail below.

Stage A assesses the level of expenditure required to maintain serviceability given the current level of expenditure and current asset performance.

Capital maintenance expenditure is influenced, in part, by the operating performance of the assets. Total annual expenditure can therefore change quite significantly from one year to the next. It would be desirable to consider expenditure over a number of years in order to smooth out any such variances when considering the influence of expenditure on serviceability trends. This approach is well established in England and Wales and Ofwat was able to average ten years of reliable historic actual expenditure

¹³⁸ Severn Trent Water covers the West and East Midlands and a rural part of Wales.

¹³⁹ South West Water covers Devon and Cornwall.

¹⁴⁰ Thames Water has some 12 million customers.

¹⁴¹ For example, Bournemouth (and West Hampshire) Water which covers just the water service for the Bournemouth area.

¹⁴² Ofwat's approach is described in the publications 'Maintaining water and sewerage systems in England and Wales: Our proposed approach for the 2004 periodic review' (May 2002) and 'Setting the price limits for 2005-10: Framework and approach – a consultation paper' (October 2002).

information and compare this with a minimum of five years of robust serviceability information in reaching its Stage A conclusions at the 2004 price review.

Unfortunately, there is no equivalent record of actual capital maintenance expenditure and serviceability information in Scotland. Consequently, we have had to use a different approach to that used by Ofwat to complete our Stage A assessment.

Our approach involved two steps.

• **Step 1** Assess Scottish Water's current capital maintenance expenditure requirement.

To estimate Scottish Water's requirement for capital maintenance, we used econometric models developed and used by Ofwat in its 2004 price review. These econometric models are built on the relationship between historic capital maintenance expenditure over the six years to 2003-04 and the asset and customer bases in England and Wales. We used Scottish Water's asset and customer base information as inputs to the Ofwat models in order to derive a predicted level of expenditure. The predicted expenditure given by this step is the level of expenditure that a company with the same asset and customer attributes as Scottish Water should need to maintain stable serviceability, this being the general current serviceability status in England and Wales¹⁴³.

We have assumed therefore that this predicted expenditure, subject to the adjustments we set out below, is a robust assessment of the amount Scottish Water needs to keep its own levels of serviceability stable. We recognise that the level of service and serviceability for Scottish Water may well be different to the average status for the industry in England and Wales. Our Stage A assessment for Scottish Water is not designed to reduce these differences.

Step 2 Adjust for Scotland.

This second step takes account of our view of any special factors that affect Scottish Water. We adjust the expenditure predicted at Step 1 for these differences.

Step 1 Assess the current expenditure requirement

We took the following steps in using the Ofwat capital maintenance econometric models:

1. Identify the explanatory factors.

The information that Ofwat has collected from companies to provide the potential explanatory factors is all taken from the same base year. The models Ofwat uses therefore have explanatory factors from that year. We should use 1997-98 Scottish explanatory factors as inputs to our use of the Ofwat models in order to ensure that the prediction of expenditure for Scottish Water that we are making is on a like-for-like basis. However, the 1997-98 information on explanatory factors is not available for Scotland, although Scottish Water has provided the information for 2003-04.

We therefore identified the mean change in each factor in England and Wales between 1997-98 and 2003-04, and applied that to Scottish Water's 2003-04 explanatory factors. We also removed Scottish Water's PPP assets at this stage.

We used this method to estimate the equivalent 1997-98 asset and customer explanatory factors for Scottish Water for each of the Ofwat models.

Apply the calculated 1997-98 Scottish explanatory factors to the Ofwat models to determine the estimated level of capital maintenance expenditure for Scotland.

We have used the derived 1997-98 Scottish explanatory factors in each of the nine models to determine the appropriate level of capital maintenance expenditure for Scotland.

Step 2 Adjust for Scotland

The result of Step 1 is a predicted level of capital maintenance expenditure for Scottish Water. This expenditure is at an 'average' level of English and Welsh absolute efficiency and should allow Scottish Water to maintain stable serviceability. The second step of our

¹⁴³ See Ofwat's September 2004 Financial Performance and Expenditure Report.

analysis, therefore, was to recognise and, if required, adjust for material differences in capital maintenance efficiency and serviceability between Scotland and England and Wales.

From our analysis of Scottish Water's relative capital efficiency using Ofwat's cost base approach, we assessed Scottish Water's efficiency in capital maintenance relative to the companies in England and Wales. We describe our use of Ofwat's cost base approach in Chapters 7 and 14. This analysis demonstrated that, in 2003-04, Scottish Water was less efficient than the companies south of the border.

The Stage A assessment in Step 1 predicted a capital maintenance expenditure requirement for Scottish Water at equivalent levels of capital maintenance efficiency pertaining in England and Wales. We have therefore assumed that the efficiency gap identified by the cost base assessment should be added to this predicted expenditure. This gives a pre-efficiency level of capital maintenance expenditure that Scottish Water should require to maintain serviceability. This is prior to the application of any efficiency reduction.

Consequently, we adjusted Scottish Water's estimated required level of expenditure at Step 1 to reflect Scottish Water's level of relative capital efficiency in 2003-04.

Stage A relies on historic evidence to assess the appropriate level of capital maintenance. Stage B is forward looking and considers how much more (or less) capital maintenance expenditure (compared with the stage A assumptions) should be required in the future due to changes (in, for instance, the rate of deterioration of the assets, or changes in other risks to service failure) that have occurred, are occurring or are likely to occur.

We considered the forward look in three ways:

 A review of Scottish Water's proposals informed by the principles of the Capital Maintenance Planning Common Framework

In recent years, the UK water industry has been working to develop a common framework in its

approach to capital maintenance planning. This project involved wide consultation within the UK water industry and the active involvement and contribution of the economic and quality regulators. The results are published in Capital Maintenance Planning: A Common Framework¹⁴⁴ (CMPCF). The CMPCF is founded on risk-based principles so that in most cases capital maintenance will be justified on the current and future probability of asset failure and the resultant consequences for customers, the environment and water service providers, including the costs arising.

The principles of the CMPCF have been widely accepted and are being progressively implemented by water service providers. Implementation is a substantial undertaking, requiring rigorous attention to all aspects of capital maintenance planning, and it cannot be expected to achieve perfection in a short period. This is especially so where the company has poor asset data and few systematic, consistent records of asset and service performance, and preventative and reactive maintenance costs.

We have sought to measure Scottish Water's progress in applying the principles of the CMPCF. Both Ofwat and this Office assume that the progressive application of the common framework principles will ensure that the assessment of capital maintenance will become more robust, will result in the companies' ability to target capital maintenance to be significantly improved, and enable expenditure to be shifted from 're-active' to 'pro-active' programmes. These assumptions enabled Ofwat to develop an approach for Stage B, and the rationale behind this approach is described in more detail in maintenance review: Independent assessment of Ofwat's, 2004 Price Review process (Initial review, May 2004)"145.

We asked Ofwat independently to assess Scottish Water's final business plan submission using its Stage B methodology, particularly the methodology for assessing the companies progress in implementing the principles of the CMPCF and using this to assess the expenditure justifications put forward. The CMPCF assessment involved

¹⁴⁴ Capital Maintenance Planning: A Common Framework, UKWIR/ Tynemarch Associates, May 2002.

¹⁴⁵ An independent review undertaken for Ofwat by Mott MacDonald, published in August 2004.

considering Scottish Water's proposals for each subservice against 18 weighted criteria, in the broad areas of information quality, forward-looking analysis and approach to outputs.

Ofwat provided us with the results of this assessment. Ofwat's method assesses and scores each of the 18 criteria in each sub-service producing a score for each sub-service. Ofwat allocated the scores for each sub-service into five possible bands, from 'trailing' to 'leading'. In each of the four subservices, while Scottish Water had addressed the principles set out in the common framework, it had not made effective progress and the results indicated that Scottish Water was in the lowest band. In the approach taken by Ofwat in the 2004 determination for England and Wales, such scores would not justify increased capital maintenance investment above the amount assessed in Ofwat's Stage A.

In the approach adopted by Ofwat for Stage B, specific items of proposed capital maintenance expenditure were identified and removed from the CMPCF assessment. These 'exceptional' items were assessed separately. We have used a similar approach.

A bottom-up review of individual projects in Quality & Standards III

The Reporter has also reviewed Scottish Water's application of the common framework approach. On non-infrastructure, the Reporter found that Scottish Water's application of the approach in the first draft business plan contained a number of deficiencies, for example for assessing capital maintenance needs at water treatment works. This caused him to conclude that the resulting programme may have been overcosted in some areas. While some of these issues were addressed for the second draft business plan, the Reporter noted that items of disagreement remained. He also highlighted deficiencies in Scottish Water's information in a number of areas and commented that substantial improvements are needed in the quality of its asset information.

On waste water infrastructure, the Reporter raised concerns about the application of key assumptions

and default views and how these might impact on the level of proposed investment. For water infrastructure he noted a number of areas where models may be subject to inaccuracy. He commented that, while the model that was used provided a logical framework to assess Scottish Water's future capital maintenance expenditure, its results should be viewed in relation to historic spend and information from other companies.

Advice from the quality regulators

We discussed capital maintenance with SEPA and the DWQR. Both expressed a view that it was important that capital maintenance was appropriately targeted.

From our analysis of Stage B we have drawn the following conclusions:

- Scottish Water's knowledge of the condition and performance of its assets is poor and it does not allow a sound, risk-based approach to capital maintenance planning to be adopted.
- Scottish Water is not yet applying the principles of the CMPCF in a sufficiently robust manner to allow it to plan capital maintenance activity and expenditure as efficiently and effectively as it should.

These two points also imply that Scottish Water has significant potential to improve asset performance and levels of serviceability for the level of expenditure that we have assumed in charge caps by improving its approach to capital maintenance planning through the next period and into the future.

 Synergies between the capital maintenance and quality programmes and between the capital maintenance programme and operating expenditure are not understood.

We have therefore allowed Scottish Water additional capital maintenance expenditure to ensure that it makes progress in improving its information and its use of the common framework. It should also retain sufficient flexibility to address the quality regulators' concerns. We have allowed seven exceptional items.

Exceptional item 1 Contingency to address public health concerns – up to £20 million

The advice we received from the quality regulators highlighted a potential concern relating to public health and environmental issues. To address this, we have allowed an exceptional item for unplanned capital maintenance expenditure. These funds should be used only in consultation with the DWQR. They will be subject to a separate reporting requirement to allow us to monitor and report on this item.

Exceptional item 2 Contingency to address environmental concerns – up to £20 million

We have also allowed an exceptional item for unplanned capital maintenance expenditure on the waste water side. These funds should be used only in consultation with SEPA. They will be subject to a separate reporting requirement to allow us to monitor and report on this item.

Exceptional item 3 To achieve CMPCF 'best practice' – up to £15 million

Our work for the price review has demonstrated that Scottish Water is some way behind the companies in England and Wales in its application of the principles of the CMPCF. To address this, we have allowed an exceptional item to ensure that Scottish Water improves its information and makes progress in its use of the CMPCF over the next four years. It is our intention to commission an independent review of the current situation in Scotland to make recommendations on how Scottish Water can achieve 'best practice'.

Exceptional item 4 To achieve progress towards economic levels of leakage - up to £40 million

Scottish Water acknowledges in its business plan that its level of leakage is higher than the economic level. However, information about current leakage levels seems to be unreliable, particularly at a local level. The impact of high leakage on capital and operating costs is also not well understood. Scottish Water is not yet able to assess the economic level of leakage, nor is it able to target efforts to reduce leakage in the most effective manner.

We have allowed a fourth exceptional item to ensure that Scottish Water identifies its economic level of leakage by December 2007 and that it reaches the economic level of leakage by 2014. We will require Scottish Water to agree the project priorities for this funding with the Quality Regulators¹⁴⁶.

Exceptional item 5 Transfer from quality investment programme, to meet iron and manganese drivers - £17.5 million (£22m transferred, less efficiencies).

We have also transferred some water main refurbishment work required to meet iron and manganese drivers to the capital maintenance budget. We believe that this is consistent with ensuring that a strategic approach to capital maintenance is adopted.

Exceptional item 6 Metering - up to £12 million

We have allowed this item to ensure that Scottish Water can meet the likely demand for meters from nonhousehold customers. This is consistent with the Ministers' guidance on the principles of charging.

Exceptional item 7 Quality programme – up to £20 million

We have allowed this item to ensure that Scottish Water carries out appropriate capital maintenance at sites where it plans to upgrade treatment plant. This item is an addition to the normal capital maintenance that Scottish Water would undertake to maintain treatment plant.

Reallocation to operating costs

We have also reallocated £0.7 million per year (£2.8 million over the period 2006-10) to operating costs to reflect Scottish Water's cost allocation practice for its central laboratory. We have made a corresponding special factor allowance in operating costs.

Our view is that Scottish Water should not commit the resources made available to reduce leakage until it has agreed its economic level of leakage with the new Water Industry Commission. It should also agree with SEPA the priority areas for leakage reduction consistent with its economic level of leakage.

The assessed level of capital maintenance for Scottish Water

We explained earlier that the Ofwat capital maintenance econometric models were developed using information covering the years 1998-99 to 2003-04 from the water and sewerage companies in England and Wales. We have input information from Scottish Water for 2003-04 only into these models.

Predicted capital maintenance costs using Ofwat's models

We set out the estimated required level of annual capital maintenance for Scottish Water in Table 13.11. We report our results for infrastructure and above-ground assets separately for the water and sewerage services. We do not report the results of each of the nine econometric models. This is for two reasons.

- Our assessments are high-level. We do not set targets for individual components of expenditure.
- Issues of cost allocation can arise at an individual model level, which would skew the results of individual models. Issues of cost allocation are not material at the higher, summary level. Any such problems are likely to balance out at a service level.

Table 13.11: Scottish Water's assessed capital maintenance requirements using Ofwat's models¹⁴⁷

	Water service	Sewerage service	Combined total	Four year totals
Infrastructu re assets	£29.3m	£24.1m	£53.4m	£213.6m
Above- ground	£50.0m	£43.0m	£93.0m	£372.0m
Service	£79.3m	£67.1m	£146.4m	£585.5m

These results reflect the average level of efficiency in England and Wales. The best performing company incurred capital maintenance costs that were around 8% lower than those predicted by the econometric models.

Overall allowance after adjustments and exceptional items

Table 13.12 sets out the adjustments we have made to the results of applying Ofwat's models, and the exceptional items that we have allowed. We have set a range for the allowed level of capital maintenance in this draft determination. The new Commission's final allowance for capital maintenance can only be determined once Scottish Water has had the opportunity to make representations on the draft determination. In this draft determination we believe that the maximum level of capital maintenance should be £780 million. It shows the total allowances over the four years 2006-07 to 2009-10.

Table 13.12: Overall capital maintenance investment allowance, after including adjustments and exceptional items¹⁴⁸

	Water service	Sewerage service	Combined total
Service total from econometric models	£317.0m	£268.5m	£585.5m
Adjustment ¹⁴⁹ to reflect Scottish Water's achievable procurement efficiency, relative to England and Wales historic average	£30.3m	£22.5m	£52.8m
Adjustment for application of common framework	£0.0m	£0.0m	£0.0m
Adjustment for reallocation of central laboratory costs	-£2.5m	-£0.3m	-£2.8m
Exceptional item 1: public health	£20.0m	-	£20.0m
Exceptional item 2: environment	-	£20.0m	£20.0m
Exceptional item 3: progress towards CMPCF best practice	£7.5m	£7.5m	£15.0m
Exceptional item 4: Leakage	£40.0m	-	£40.0m
Exceptional item 5: Iron and Manganese (DW5) water mains rehabilitation	£17.5m	-	£17.5m
Exceptional item 6: Metering	£12.0m		£12.0m
Exceptional item 7: Quality programme	£15.0m	£5.0m	£20.0m
Total allowance	£456.8m	£323.2m	£780.0m

This maximum level for capital maintenance is, we believe, more than adequate to maintain the serviceability of Scottish Water's current asset base. This level of funding would be 33% higher than the average company in England and Wales would have spent in recent years to maintain an equivalent asset base, according to the econometric models. In its 2004 price review, Ofwat assumed that companies would

¹⁴⁷ Totals may not add due to rounding.

¹⁴⁸ Totals may not add due to rounding.

¹⁴⁹ This adjustment takes into account Scottish Water's current relative efficiency in capital maintenance from the cost base analysis. It assumes that Scottish Water will close 50% of this relative efficiency gap, phased equally over the three years 2007-08 to 2009-10. It also assumes that Scottish Water will achieve the continuing improvement targets for capital maintenance set by Ofwat in its 2004 price review. The adjustment is positive due to Scottish Water's relative inefficiency compared with average performance in England and Wales.

improve on their historic levels of efficiency by around 8% to 9% in 2005 to 2010. The total allowance is therefore around 45% higher than companies are expected to spend to match Ofwat's targets.

Ofwat did, however, allow companies additional capital expenditure to the extent that they could demonstrate a need through their application of CMPCF. For most water and sewerage companies, these increases ranged from around 15% to 25%. We noted earlier that the evidence put forward by Scottish Water on its application of CMPCF would not be sufficient to qualify for such an increase, using Ofwat's criteria. Nevertheless, even without such an increase, the level of capital maintenance that we have allowed Scottish Water is significantly higher (around 15% to 20%) than that which Ofwat would have allowed a company that had achieved a sufficiently robust application of CMPCF principles to justify its proposals for increased expenditure at the 2004 price determination.

The lower end of our proposed range for the allowed level of capital maintenance is £647 million. Even this lower allowed level of capital maintenance is higher than a company south of the border (in receipt of an upward adjustment for its use of the common framework) is likely to have required. The new Commission will set a final allowance for capital maintenance after it has had an opportunity to review representations from Scottish Water and other stakeholders.

Infrastructure renewals charge

Infrastructure assets are generally underground assets with long useful lives. These lives, however, tend to be difficult to assess accurately. The rate of wear will vary with a range of factors such as construction method, choice of material, soil type, climate and usage. This makes assessing the annual cost of use of the infrastructure problematic.

The underground network will never be replaced in its entirety. Instead, sections are renewed when their condition and performance deteriorates to the point where it is cost-effective to replace them (reducing repair costs, for example) or it is necessary to replace them in

order to maintain customer service levels (to reduce interruptions, for example).

It is, therefore, not realistic or meaningful to assess an 'average life' for the infrastructure assets. This makes it difficult to use conventional accounting methods to calculate depreciation for infrastructure assets, as these methods rely on the concept of establishing an average asset life for each component of the asset base.

Instead, we treat the whole infrastructure network as a single system. The complete asset will never become obsolete or require replacement at any one time. It is replaced in parts as different elements come to the end of their useful lives. The IRC is intended to allow for this gradual replacement of the infrastructure asset over time.

The IRC is charged to Scottish Water's revenue each year. It is calculated as the average of the forecast capital expenditure required to maintain the infrastructure assets, without any loss of value, over the next 15 to 20 years. Over this period, the annual IRC should remain broadly unchanged from year to year, ignoring inflation. This is because the requirement for maintenance or renewals expenditure will be spread out over a reasonable period of time. This assumes, however, that the size of the network and the required standards of serviceability remain fairly stable.

Infrastructure renewals expenditure

In any one year the actual level of investment expended on the infrastructure assets is classed as the IRE. In its proposed investment plan, Scottish Water provided details of its proposed levels of IRE for each year of the regulatory control period. These are the amounts that Scottish Water considers necessary to spend on the infrastructure in order to maintain serviceability at existing levels.

If the amount that Scottish Water spends on infrastructure renewals exceeds the IRC, then this additional expenditure will be added to Scottish Water's regulated capital value. This is referred to as a prepayment.

If the amount that Scottish Water spends on infrastructure renewals is less than the amount envisaged in the IRC, then this 'shortfall' would be deducted from the RCV. This is referred to as an accrual. It is added to Scottish Water's accounts as a liability because Scottish Water has charged maintenance work to its revenue that it has not yet carried out.

The IRC will tend to remain generally stable from one year to the next. The actual IRE, on the other hand, is likely to vary due to planned and unplanned changes in the network investment requirements from year to year. Unplanned investment requirements can arise from factors such as system failures, extreme weather or the actions of a third party which require Scottish Water to undertake maintenance.

Over the course of the regulatory period, accruals and prepayments should tend to balance each other out. We seek to minimise any discrepancy between the respective figures for IRC and IRE. We do this by adjusting the IRC figure at each price review to take account of the long-term requirement for efficient and effective expenditure on infrastructure renewals.

The impact of the infrastructure renewals charge on prices

The IRC impacts on prices in two ways in the RCV method of price setting. First, the charge passes directly into prices as part of Scottish Water's assessed revenue requirement. Second, as discussed above, any difference between the IRC and the IRE will impact on the value of the RCV. As Scottish Water is allowed to earn a return on the RCV, the level of IRC and IRE, therefore, will also impact indirectly on prices.

It is important that the price setting mechanism we use is able to respond to changes in IRE so that Scottish Water receives appropriate funding through the IRC. At the outset of the regulatory control period, we estimate the IRC and IRE and any impact on the RCV:

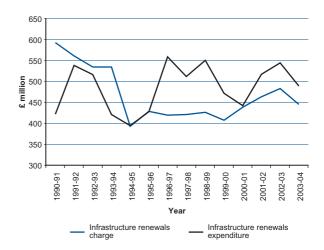
- At the end of each year, we will deduct the IRC from Scottish Water's RCV as part of the 'rolling forward' process¹⁵⁰. We do so because, as an explicit component of the revenue requirement, the IRC will have been funded through customer charges. Therefore, Scottish Water should not expect to earn a return on it.
- However, the IRE is added to the RCV at the end of each year of the regulatory period. As IRE is actual expenditure on infrastructure, we regard it as an addition to the asset base. To the extent that the IRE exceeds the IRC, this is an addition that has not been funded elsewhere in the revenue requirement. Therefore, we would allow Scottish Water to earn a return on it through the RCV.

We have assumed that the IRE will equal the IRC during this regulatory control period.

The IRC and IRE in England and Wales

Figure 13.1 shows infrastructure renewals expenditure south of the border (2003-04 prices) and the infrastructure renewals charge.

Figure 13.1: Comparison of infrastructure renewals expenditure and charges for England and Wales 1991-2004



¹⁵⁰ Rolling forward is a process by which regulators recognise changes, or anticipated changes, in the RCV over the duration of the regulatory control period. A key element of this process is to recognise additions to the asset base by including them in the RCV, and the deterioration of assets over time by deducting depreciation.

In its final determinations, Ofwat funded companies, on average, for 22% more maintenance in the 2005-10 period¹⁵¹ than in the 2000-05 period. It may therefore be expected that both the IRE and the IRC will rise in England and Wales over that period.

Implications of observed IRC in England and Wales for Scotland

It is useful to consider the IRC per property and per asset value in England and Wales. A corresponding value can then be implied for the water industry in Scotland.

We have assessed water and waste water separately in our analysis and used the following explanatory factors:

Water

- number of billed properties;
- number of connected properties; and
- length of water mains.

Waste water

- number of billed properties;
- household population equivalent; and
- length of sewers.

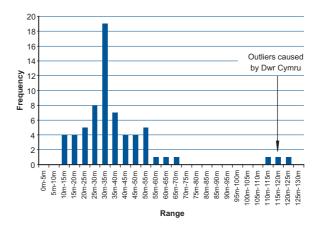
For each explanatory factor we have:

- Calculated the minimum, maximum, industry average and median values of the ratios between the IRC and the comparator through time.
- Assessed the extent of any relationship between the factor and the IRC.
- Established a range within which, based on observed ratios, we would expect Scottish Water's IRC to fall.

Our comparisons of the water IRC in England and Wales relative to potential explanatory factors suggest that, on average, the IRC for Scottish Water's water service should be in the range of £32 million to £49 million.

Figure 13.2 summarises the results of our comparisons. It shows that the most frequent result indicates an IRC for Scottish Water's water service in the range £30 million to £35 million. The overall average result is £38 million.

Figure 13.2: Frequency of comparisons between Scotland and England and Wales for IRC for the water service



Our analysis suggests that a reasonable implied IRC for Scottish Water for water services could be around £30 million to £50 million per year in 2003-04 (in 2003-04 prices).

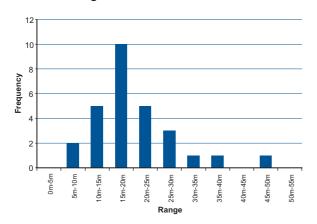
Waste water IRC

Our comparisons of the waste water IRC in England and Wales relative to potential explanatory factors indicates an IRC for Scottish Water's waste water service in the range of £15 million to £26 million.

Figure 13.3 summarises the results of our comparisons. It shows that the most frequent result indicates an IRC for Scottish Water's sewerage service in the range £15 million to £20 million. The overall average result is £19 million.

¹⁵¹ This is the average increase in capital maintenance investment allowed by Ofwat in its 2004 price review following its assessment of companies' application of CMPCF. Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', 2004.

Figure 13.3: Frequency of comparisons between Scotland and England and Wales for infrastructure renewals charge: waste water service



Total IRC

The total IRC for Scottish Water in 2003-04 should have been in the range £45 million to £75 million.

Scottish Water's actual IRC in 2003-04 was £143 million. This appears to be high compared with both the England and Wales average and the maxima.

If we assume that Ofwat's 22% increase in maintenance applies equally to both infrastructure and non-infrastructure assets, then we may expect an IRC of around £55 million to £90 million in 2003-04 prices. If outturn inflation is 2.5%, this would suggest that by 2009-10 the IRC could be as high as £65 million to £105 million.

Based on this evidence, we have allowed Scottish Water an IRC of £79 million per year in 2003-04 prices (£86 million in 2005-06 prices)

Conclusion

We have applied Ofwat's capital maintenance econometric models to assess the appropriate level of capital maintenance investment to allow Scottish Water in price limits. We have considered carefully Scottish Water's comments on the applicability of Ofwat's models. We have also considered, but not allowed, Scottish Water's claim for special factors.

To assess whether Scottish Water should be allowed additional funding over and above that predicted by the models, we have applied the approach developed by Ofwat for assessing the justifications to increase spending put forward by the England and Wales companies at the 2004 review. We conclude that Scottish Water should be allowed additional funds to enable it to address public health and environmental concerns expressed by the quality regulators. We have also allowed an amount to enable Scottish Water to begin to make progress towards an economic level of leakage, and to improve its ability to plan effective capital maintenance activity.

We have assessed Scottish Water's requirement for infrastructure renewals expenditure using Ofwat's capital maintenance econometric models. The infrastructure renewals charge should be in line with this expenditure, over time. We have examined the infrastructure renewals charges reported by companies in England and Wales in order to confirm the appropriate level of charge for Scottish Water.

Section 4: Funding capital expenditure Chapter 14: Financing the quality, growth and customer service investment necessary to meet ministerial objectives

Introduction

In February 2005, the Scottish Ministers set out clear objectives 152 to improve water quality, environmental performance and customer service in the Scottish water industry. Meeting these objectives will require substantial investment to maintain the performance of existing assets, provide new treatment processes for both water and waste water, and remove constraints on development. Investment in improvements accounts for more than half of Scottish Water's capital expenditure. It is therefore essential that customers receive value for money from this investment.

In this chapter we look in detail at the investment programme that Scottish Water developed to meet the Ministers' objectives for improving water and waste water services. We have reviewed both the scope and design of the proposed programme and assessed the scope for more efficient delivery.

In reviewing Scottish Water's proposals, we have taken account of the views of the Reporter¹⁵³. We have also used independent engineering consultants Black and Veatch, and Faber Maunsell to examine key aspects of the programme, such as the proposed investment of more than £900 million at water treatment works. We are also grateful to Ofwat for its assistance in ensuring that our approach was broadly consistent with that which is used south of the border.

We focus on the investment programme set out in detail in Table C of Scottish Water's second draft business plan. There are a number of apparent inconsistencies between Table C and other information contained in the business plan. Scottish Water has explained that this is a function of the timing of the preparation of Table C and the remainder of the draft business plan. It is important to note that Scottish Water submitted a business plan that would have delivered only the Ministers' essential objectives. However, in line with our business plan guidance, Table C lists all of the projects required to

deliver both the essential and the desirable objectives outlined in the Ministerial Guidance.

All prices in this chapter are as at 2003-04 unless otherwise stated, and represent costs before efficiencies have been applied.

Scottish Water's investment proposals

Scottish Water submitted its second draft business plan on 20 April 2005. Table C of the plan provides a project level breakdown of the proposed investment programme. Table C also provides detailed information on the drivers and outputs associated with each project line in the programme.

Table 14.1 provides a breakdown of the 2006-10 expenditure in Table C for each of the major investment categories. Scottish Water estimated that the investment required to meet the Ministers' objectives was £3.37 billion. Such a programme would have been around £1 billion greater than that outlined in the first draft business plan. This plan would have required investment of £843 million per year, or around £360 each year for every connected property.

Table 14.1: Scottish Water second draft business plan investment proposals

£ million (October 2003 prices)	2006-10
Maintaining current water and waste water services ¹⁵⁴	£1,085m
Drinking water quality and resource enhancements	£1,064m
Environmental quality enhancements	£845m
Customer service improvements	£84m
Development constraints and growth	£221m
First time provision	£70m
Total Quality & Standards III essential plus desirable	£3,369m

In its second draft business plan³, Scottish Water gives the following reasons for the increase in investment from the first draft business plan:

¹⁵² Ministerial Statement on water services in Scotland, Wednesday 9 February 2005 by the Deputy Minister, Lewis MacDonald MSP.

¹⁵³ See Volume 4, Chapter 13 and 16 for the Reporter's views of Scottish Water's investment programme submissions.

¹⁵⁴ Scottish Water's second draft business plan submission, dated April 2005, Executive Summary, page A-12 Section A4.10.

- The appearance at a late stage of the Quality and Standards III process of significant new 'essential' objectives beyond those proposed in the first draft business plan.
- Differences in the timing of the 'essential' objectives between the two plans.
- Recently revised forecasts for capital inflation.
- A re-estimate of the costs required to complete Quality and Standards II¹⁵⁵.

We published Scottish Water's second draft business plan in full on 16 May 2005. We also published an open letter to the Scottish Ministers¹⁵⁶. In that letter we commented that we remained confident that the ministerial objectives could be achieved at significantly lower costs than those contained in Scottish Water's business plan. We noted that regulators had often reduced very substantially the cost of capital investment programmes, without there being an impact on the outputs that are delivered.

Table 14.2 shows the cost of projects in Table C of the second draft business plan, split by driver: capital maintenance, customer service, drinking water quality, environmental, and others (such as development constraints).

Table 14.2: Cost of projects, by driver

Туре	Driver	Description	2006-10	Subtotals	2010-14	Subtotals
СМ	СМ	Capital maintenance	£1,084.8m	£1,084.8m	£930.0m	£930.0m
S	CS1	Pressure	£5.7m		£8.6m	
Customer service drivers	CS2	Odour management	£19.1m		£28.6m	£88.9m
Customer rvice drive	CS4	Business metering	£0.7m	£84.1m	£1.0m	
ser	CS11	Sewer flooding	£58.6m		£50.7m	
	DW1	Lead standard	£20.9m		£152.9m	
	DW2	Trihalomethane standard	£28.8m		£0.3m	
	DW3	All other standards in the Drinking Water Directive	£298.4m		£0.0m	
	DW4	Cryptosporidium	£175.9m		£0.3m	
	DW5	Iron and manganese	£26.3m		£13.7m	
	DW7	The Birds/Habitats Directive	£56.2m		£14.4m	
	DW8	Security of supply	£0.0m	-	£8.5m	
vers	DW9	Additional physical security	£71.9m	†	£41.6m	
ty dri	DW10	Raw water	£0.0m		£0.9m	
Drinking water quality drivers	DW11	Water fittings byelaws	£4.1m	†	£4.1m	
ater (DW13	Water aesthetic quality	£277.5m	£1,063.7m	£8.2m	£326.0m
g wa	DW15	Compliance with recommendations	£3.1m	†	£3.1m	
inkir	DW16	Water Safety Plans	£4.5m	1	£4.5m	
۵	DW17	Cross connections	£13.5m	1	£13.5m	
	DW20	Flood Estimation Handbook	£0.9m		£0.9m	
	WR1	UKTAG guideline	£60.6m		£15.3m	
	WR2	Operational practice at reservoirs	£8.0m		£40.6m	
	WR3	Protect water quality	£0.0m		£0.0m	
	WR4	Water Framework Directive ecological objective	£0.9m		£3.3m	
	WR5	Compliance with water quality licences	£12.5m	1	£0.0m	
	EC01	Urban Waste Water Treatment Directive	£298.2m		£380.8m	
	EC02	Bathing Water Directive	£146.7m	1	£2.6m	
	EC03	Shellfish Waters Directive	£14.3m	†	£37.8m	
	EC04	Freshwater for Fish Directive	£61.2m	†	£15.3m	
	EC06	Sludge use in Agriculture Directive	£0.0m	†	£74.6m	
ers	EC07	Birds Directive	£0.2m	1	£1.6m	
driv	EC08	Habitats Directive	£4.2m	†	£0.0m	
ental	EC09	Dangerous Substances Directive	£6.3m	£845.2m	£0.0m	£866.2m
onm	EC10	Water Framework Directive	£240.9m	†	£345.5m	
Environmental drivers	EC11	Landfill Directive	£3.5m	†	£0.0m	
ш	EC12	Integrated Pollution Prevention D	£9.4m	†	£0.0m	
	NH01	Section 54 WIA (Scotland) 2002	£4.5m	†	£4.3m	
	WA01	Definition of Waste	£1.6m		£3.3m	
	WQ01	Water Environment and Water Services Act	£42.2m		£0.4m	
	WQ02	Environmental Act 1995, Section 34	£12.0m		£0.0m	
TP	FTP	First time provision	£70.0m		£13.7m	
DC	RDC	Development constraints	£291.4m	£229.0m	£242.8m	
			£3,369.3m		£ 2,453.8 m	

Table C suggested that investment in drinking water quality and environmental improvement accounts for 57% of Scottish Water's estimated total programme cost. This reduces to 48% in the second half of the programme. Scottish Water noted in its second draft business plan that the balance of improvement

investment was, in its view, skewed to the first regulatory control period.

Table 14.3 shows the cost and number of projects by subclass.

Table 14.3: Cost and number of projects, by subclass

Subclass	Cost 2006-10	Cost 2010-14	Cost Q&SIII	Number of projects 2006-10	Number of projects 2010-14
Cross connections	£ 13.5m	£ 13.5m	£ 26.9m	1	1
Combined sewer overflow CM ¹⁵⁷	£ 0.9m	£ 1.2m	£ 2.2m	4	4
Combined sewer overflow completion	£ 0.2m	£ 0m	£ 0.2m	1	0
Development constraints – Part 3	£ 66.9m	£ 74.6m	£ 141.4m	4	4
Development constraints – Part 4	£ 144.0m	£ 144.0m	£ 288.1m	4	4
Development constraints – water resources	£ 10.4m	£ 10.4m	£ 20.9m	1	1
First time provision – Part 3	£ 40.2m	£ 5.3m	£ 45.5m	3	3
First time provision – Part 4	£ 29.8m	£ 8.4m	£ 38.2m	3	3
Internal flooding	£ 58.6m	£ 73.1m	£ 131.7m	1	2
IPPC ¹⁵⁸ schemes	£ 9.4m	£ 0.0m	£ 9.4m	1	0
Landfill Directive	£ 3.5m	£ 0.0m	£ 3.5m	1	0
Lead	£ 20.7m	£ 152.8m	£ 173.6m	1	2
Low pressure	£ 5.7m	£ 8.6m	£ 14.3m	1	1
M&G ¹⁵⁹ – Asset intelligence	£ 81.6m	£ 44.5m	£ 126.1m	28	24
M&G – Health and safety	£ 49.5m	£ 21.2m	£ 70.7m	22	22
M&G – IT	£ 84.9 m	£ 53.8m	£ 138.7m	32	30
M&G – Logistics	£ 15.7m	£ 27.6m	£ 43.3m	24	24
M&G – Property	£ 29.8m	£ 18.4m	£ 48.1m	124	108
M&G – Scientific	£ 4.6m	£ 4.4m	£ 9.0m	8	8
M&G – Telemetry	£ 55.2m	£ 22.7m	£ 77.9m	122	78
Metering	£ 6.3m	£ 9.4m	£ 15.7m	2	2
Minor sewer collapse	£ 28.6m	£ 28.7m	£ 57.3m	4	4
Odour management	£ 19.1m	£ 28.6m	£ 47.7m	1	1
Outfall CM	£ 1.8 m	£ 2.9 m	£ 4.7m	4	4
Overlap removal	-£ 51.2 m	-£ 0.5m	-£ 51.8m	1	1
Septic tank CM	£ 5.3m	£ 5.3m	£ 10.7m	1	1
Septic tank upgrade	£ 12.0m	£ 3.6m	£ 15.7m	8	3
Service relocation	£ 6.6 m	£ 4.3 m	£ 10.8m	5	5
Sewage pumping station CM	£ 7.9m	£ 30.7 m	£ 38.6m	5	5
Sewage pumping station reactive	£ 1.8m	£ 1.8 m	£ 3.6m	1	1
Sewage pumping station refurbishment	£ 2.1m	£ 0.0m	£ 2.1m	5	0
Sewer rehabilitation	£ 104.8 m	£ 103.2m	£ 207.9 m	97	10
Sewer structures CM	£ 7.2m	£ 7.9m	£ 15.1m	4	4
Sludge CM	£ 2.1m	£ 21.7m	£ 23.8m	5	5
Sludge conditioning centre	£ 0.0m	£ 22.7m	£ 22.7m	0	11
Sludge digestion	£ 0.0m	£ 74.0m	£ 74.0m	0	6
Sludge treatment centre	£ 0.0m	£ 36.6m	£ 36.6m	0	4
Sludge centre – PFI	£ 8.3m	£ 23.7m	£ 32.0m	1	1
Sewage treatment works CM	£ 29.7m	£ 102.7m	£ 132.4m	5	6
Sewage treatment works completion	£ 2.5m	£ 0.0m	£ 2.5m	9	0
Sewage treatment works completion Sewage treatment works reactive	£ 6.7m	£ 6.7m	£ 13.3m	1	1
Sewage treatment works reduced Sewage treatment works refurbishment	£ 19.7m	£ 0.0m	£ 19.7m	25	0
Sewage treatment works returbishment Sewage treatment works upgrade	£ 101.4m	£ 376.3m	£ 477.7m	39	112
0 10	£ 101.4111	£ 376.311	£ 59.8m	2	1
Sewage treatment works – PFI Sustainable urban drainage systems CM	£ 26.0111	£ 51.6m	£ 10.0m	4	4
Sustainable urban drainage systems CM Scottish Water Wide	£ 76.4 m	£ 5.0m £ 54.5m	£ 10.0m	6	4
					0
Unsatisfactory Intermittent Discharge – dual manhole	£ 0.6m	£ 0.0m	£ 0.6m	14	-
Unsatisfactory Intermittent Discharge – overflow	£ 624.7m £ 4.4m	£ 271.4m	£ 896.1m	272	212
Unsatisfactory Intermittent Discharge – surface water outfall Unsatisfactory Intermittent Discharge – PFI	£ 4.4m £ 50.9m	£ 5.5m	£ 9.9m	5	14 0
, ,	£ 50.9m £ 183.6m	£ 0.0m £ 149.1m	£ 50.9m	3	-
Water infrastructure CM			£ 332.7m	20	15
Water mains rehabilitation	£ 175.8m	£ 108.4m	£ 284.2m	135	5
Water pumping station CM	£ 14.1m	£ 17.2m	£ 31.3m	1 7	1
Water pumping station refurbishment	£ 6.7m	£ 0.0m	£ 6.7m	7	0
Water resources OM	£ 134.7m	£ 74.0 m	£ 208.7m	6	4
Water resources CM	£ 15.3 m	£ 17.7m	£ 33.0m	3	3
Water storage	£ 15.7m	£ 15.7m	£ 31.3m	1	1
Water treatment works CM	£ 15.2m	£ 84.3m	£ 99.5m	1	1
Water treatment works completion	£ 12.0m	£ 0.0m	£ 12.0m	32	0
Water treatment works new	£ 6.7m	£ 0.0m	£ 6.7m	3	0
Water treatment works refurbishment	£ 3.2m	£ 0.0m	£ 3.2m	3	0
Water treatment works upgrade	£ 932.3m	£ 8.3m	£ 940.5m	229	39
Others	£ 16.3m	£ 36.1m	£ 52.4m	11	9
Total	£ 3,369.3m	£ 2,453.8m	£ 5,823.1m	1,367	819

 ¹⁵⁷ Integrated pollution Protection and Coastal.
 158 Management and General.
 159 Capital Maintenance.

This analysis highlights a number of areas where Scottish Water is proposing significant investment during the 2006-10 period. In this regard it is important to remember that the regulatory control period in Scotland is four years, whereas in England and Wales it is five.

Scottish Water plans to invest £932 million in upgrading water treatment works. This exceeds the total quality investment planned at water treatment works in the whole of England and Wales in the period 2005-10¹⁶⁰.

Similarly, Scottish Water claims that it needs to spend £625 million on improving unsatisfactory intermittent discharge (UID) projects. By comparison, the total spend of the ten water and waste water companies in England and Wales will be around £816 million¹⁶¹ in the 2005-10 period.

Ensuring adequate programme definition

In setting out our guidance for Scottish Water's second draft business plan¹⁶², we included the requirement to provide a detailed list of capital projects and their associated drivers and outputs. We saw this as essential to ensuring that customers receive value for money and that stakeholders can monitor Scottish Water's performance in delivering the investment programme.

Our initial assessment of Scottish Water's second draft plan submission indicated that the level of definition in its investment programme did not comply with our requirements. We wrote to Scottish Water¹⁶³ to ask it to provide information at a sufficiently detailed level for us to analyse the programme and for stakeholders to monitor programme delivery.

Scottish Water responded, saying that it was not possible, or in some cases desirable, to provide further detail on its proposed investment programme. It cited a current lack of clarity as to which projects would comprise the programme, as well as concerns about putting site-specific information into the public domain. Scottish Water did, however, offer to provide sight of the database from which it had developed its investment programme submission.

We wrote on two more occasions 164,165 to ask Scottish Water to submit the database. Scottish Water responded on 3 May 2005, providing its database but expressing concerns about the use and publication of this information.

We wrote again in early May. We requested further disaggregation of 14 project lines totalling some £322 million of expenditure and better definition of the investment required at or adjacent to PPP sites. Our continuing review had demonstrated that Table C had provided sufficient disaggregation of the water treatment works and UID programmes. We also agreed with Scottish Water that the ministerial investment requirements for the relief of development constraints and malodour abatement could not be determined in detail at this stage. In addition, we explained that we would use Ofwat's econometric models to define an appropriate level of capital maintenance. As such, further definition of the proposed capital maintenance investment programme would not be required.

Scottish Water provided the requested information on 12 May 2005.

There is now sufficient disaggregation of the investment programme for us to analyse the scope, design, efficiency and effectiveness of Scottish Water's proposed investment to meet the Ministers' objectives. We believe that some further work will be needed to define the programme in the period prior to publication of the final determination by the Water Industry Commission at the end of November 2005. Further definition will be required to ensure that the investment programme can be effectively monitored.

Technical review of the programme

We have worked closely with the Reporter, SEPA and the DWQR to review Scottish Water's proposals. We have

¹⁶⁰ In England and Wales the whole industry is proposing to deliver a £689 million (post-efficiencies) programme of drinking water quality treatment improvements (2002-03 prices) at 239 sites.

¹⁶¹ In 2002-03 prices.

¹⁶² This guidance is discussed in Chapter 7 of this volume.

¹⁶³ Regulatory letter WIC 62, 'Request for increased information on Scottish Water's 2nd draft business plan investment programme'.

¹⁶⁴ Regulatory letter WIC 62.1.

¹⁶⁵ Regulatory letter WIC 62.2.

sought assurances that the investment projects contained in Table C are consistent with the objectives set out in the Ministerial Guidance.

The Reporter's assessment of the investment programme is presented in Chapter 16 of Volume 4 of this draft determination. We met with both SEPA and the DWQR on several occasions during April and May 2005 to discuss the contents of the investment programme. They have provided formal confirmation¹⁶⁶ of the extent to which the investment proposals meet the Ministerial Guidance of February 2005.

We asked the Reporter¹⁶⁷ to highlight any areas where we might need to seek further advice on the appropriateness of proposed investment projects. It was clear both from early comments from the Reporter and from our own analysis that we would need more resources to review the detail of the investment programme. We engaged independent engineering consultants, Faber Maunsell and Black and Veatch¹⁶⁸, to review the projects contained in Table C. In particular, we asked the consultants to focus on the following issues:

Errors and duplication

A number of what appeared to be duplicate lines were immediately evident in Scottish Water's programme. The programme also included investment at PPP works, which we would not expect to be funded through direct capital investment.

Water treatment works

Investment on drinking water quality accounted for just under a third of Scottish Water's total £3.37 billion investment programme for 2006-10. The Reporter had identified concerns regarding the extent to which strategic solutions were being employed and the scope of the projects.

UID programme

Costs in this area totalled £681 million for the 2006-10 period. This comprises £676 million for unsatisfactory

combined sewer overflows (CSOs) and emergency overflows, £4 million for unsatisfactory surface water outfalls and £0.6 million for dual manhole problems. Unit costs for the 275 unsatisfactory CSO projects in the scheme, at more than £2.4 million per project, appeared to be very high. There were also concerns about the extent to which the requirements in this area had been subject to proper modelling.

Water Framework Directive investment

Investment associated with the Water Framework Directive driver (EC10) reported in Scottish Water's programme amounted to some £241 million. Some of this investment related to the UID investment programme discussed above. Scottish Water's programme also contained a further £134 million of investment on projects relating to the Water Framework Directive with drinking water quality drivers. We were concerned to understand whether this investment was consistent with the Ministers' objectives.

Development constraints and first time connection

Scottish Water estimated investment to resolve development constraints and first time connections at £291 million. The scope and method of assessing the required level of investment appeared to be questionable.

We sought advice from the independent consultants on the extent to which there were:

- duplication or errors in the listing of projects and outputs in the programme;
- projects that did not meet the objectives set out in the Ministerial Guidance;
- · over-scoping of requirements;
- inappropriate solutions;
- insufficient definition, leading to an inability to monitor delivery;

¹⁶⁶ See Appendices 8 and 9.

¹⁶⁷ See Volume 5 of our methodology document 'Our work in regulating the Scottish Water industry: The scope for capital investment efficiency', Chapter 10, Section 10.4, page 85.

¹⁶⁸ Black and Veatch were sub-contracted to Faber Maunsell

- inappropriate use of generic costings;
- incorrect interpretation of standards or of the requirements of the quality regulator;
- wrong sizing or inappropriate specification of requirements; and
- duplication of outputs from Quality and Standards II.

The consultants held a series of meetings with the Scottish Water staff who had been involved in developing the investment plan contained in Table C. They also carried out 37 site visits to water treatment works, undertook desk top assessments of a further five sites and reviewed a wide range of information provided by Scottish Water concerning the methodology employed in defining and costing the investment programme.

We discussed the results of the consultants' work at a series of workshops with SEPA (for the UID and Water Framework Directive programmes), DWQR (for the drinking water quality investment) and the Scottish Executive (for development constraints and first time provision). At these meetings we emphasised that our role was to ensure that the Ministers' objectives would be met at the lowest reasonable overall cost.

Faber Maunsell's thorough and independent assessment has confirmed many of the concerns identified by the Reporter. As such, it provides a strong evidence base for the adjustments that we have made to Scottish Water's proposed investment programme.

As noted earlier, Ofwat helped us to assess how Scottish Water's investment proposals compared with those of the companies in England and Wales. In particular, they helped us to ensure that a broadly consistent approach to assessing investment requirements has been applied north and south of the border¹⁶⁹.

The use of the Reporter and of independent engineering consultants is consistent with Ofwat's approach to assessing the investment proposals of the companies in England and Wales. Ofgem and the Office of Rail Regulation (ORR) have also used technical consultants

to carry out detailed project level reviews of the investment proposals of regulated companies.

Impact of the investment programme review on the baseline

The technical review of the programme by the Reporter and Faber Maunsell highlighted a number of issues in relation to Scottish Water's proposed investment programme. These included:

- · duplication of project lines in the programme;
- inclusion of projects which did not meet ministerial objectives;
- inclusion of investment targeted at PPP schemes;
- a lack of a strategic approach in a number of areas;
- · over-scoping of project solutions;
- over reliance on the use of generic costing approaches; and
- duplication of outputs already required in Quality and Standards II.

Similarly, analysis of Scottish Water's project costs by both Ofwat and this Office indicated that, in certain areas of the programme, the costs per scheme proposed by Scottish Water significantly exceeded the costs put forward to Ofwat by the water companies in England and Wales at the 2004 price review. There was also evidence that the costs per scheme in certain areas were significantly higher than the outturn costs for similar schemes in the current Quality and Standards II programme.

We have made a number of adjustments to Scottish Water's investment proposals for quality enhancement and growth to reflect the conclusions of our independent experts. These relate to:

 the removal of duplications and errors in the programme (including schemes not meeting ministerial objectives);

¹⁶⁹ The role of Ofwat in challenging the scope of the investment programme is wider than the role of the new Water Industry Commission in Scotland.

- the removal of investment targeted at PPP schemes;
- a reduction in the cash investment required to meet drinking water quality objectives, primarily associated with investment at water treatment works and abstraction control measures for the Water Framework Directive;
- a reduction in the cash investment required to meet environmental objectives, primarily associated with investment on UIDs; and
- a reduction in the cash investment required to meet strategic development objectives associated with both the removal of development constraints and first time provision.

It is important to note that we have not reduced, delayed or otherwise amended the outputs required by Ministers. In the following sections we discuss the rationale for the changes we have made in more detail.

For each area of the programme we have estimated the highest level of spending (pre-efficiency) that we consider to be appropriate. We have also set the lowest level of investment that we believe, realistically, could be required.

Review of planned investment on drinking water quality

Scottish Water estimated that £1,064 million of investment is required to meet the Ministers' objectives for improvements to drinking water quality during the 2006-10 regulatory control period. This implied investment of £266 million a year, or around £113 each year for every connected customer. In comparison, the total investment in England and Wales in the period 2005-10 is £425¹⁷⁰ million a year, or around £18 each year per customer.

Scottish Water's second draft business plan indicated that the high levels of investment in drinking water

quality were needed to meet increased water quality standards, particularly for trihalomethanes¹⁷¹ and Cryptosporidium¹⁷². The DWQR has confirmed that the drinking water quality outputs delivered by Scottish Water's proposed investment programme meet the requirements set out by Ministers.

Scottish Water's proposals can be broken down into the sub-categories shown in Table 14.4. This includes a 'reduction for overlap' line with a negative value of £51 million. Scottish Water has indicated that this is associated with an adjustment for the overlap between quality investment and capital maintenance investment at water treatment works.

Table 14.4: Breakdown of Table C drinking water quality investment into sub-category

Sub-categories	Project cost totals 2006-10 (£m)
Water treatment works	£830.8m
Water mains rehabilitation (DW5 iron and manganese)	£22.2m
Water resources (Water Framework Directive)	£134.7m
Security enhancement at water treatment sites	£76.4m
Customer requested lead pipe removal	£20.7m
Other minor elements	£30.2m
Scottish Water reduction for 'Programme overlap'	-£51.2m
Total 2006-10	£1063.7m

Water treatment works

Table C includes investment in improved drinking water quality at 239 of the 371 water treatment works in Scotland¹⁷³. At a total cost of £831 million, this comprises more than 80% of the total investment in improvements in drinking water quality. This cost is around one-third higher than the cost in England and Wales, again to upgrade 239 works (where the average size of the works will be considerably larger). Moreover, the Reporter identified a number of concerns about this area of the investment programme. It has, therefore, been an important focus of our investment programme review.

¹⁷⁰ This figure is from Ofwat's final determination of future water and sewerage charges 2005-10 and has been inflated by 5.46% to represent capital goods inflation between 2002-03 and 2003-04.

¹⁷¹ Trihalomethanes are a by-product of disinfection linked to the presence of organic matter in raw water. Compliance with a trihalomethane standard of 100_g/l is required by 2008.

¹⁷² The Cryptosporidium (Scottish Water) Directions 2003 place new requirements on Scottish Water, particularly relating to the treatment of recycled water used in the treatment process.

¹⁷³ Scottish Water's second draft business plan includes proposals to reduce the number of operational water treatment works to 301 by 2009-10.

The review process carried out by the Reporter and Faber Maunsell included:

- assessing the extent to which Scottish Water had correctly interpreted the drinking water quality requirements set out by Ministers;
- establishing the methodology by which Scottish Water had determined the investment required at each water treatment works;
- meeting with Scottish Water staff to discuss the assumptions underpinning this methodology; and
- carrying out site visits to determine whether Scottish Water's approach had correctly determined the scope of investment required at a representative sample of works.

The Reporter carried out site visits at a random sample of eight water treatment works. Faber Maunsell selected a further 36¹⁷⁴ water treatment works for site visits. They visited a representative range of works by size and by level of proposed investment. They also carried out desk top analysis of a further five sites.

We believe that the conclusions of the Reporter and Faber Maunsell have provided solid evidence for our assessment of Scottish Water's proposals.

Our assessment of the required investment in water treatment works

Our review indicated that there is considerable evidence that the investment required to meet the ministerial objectives had been scoped incorrectly. In particular, the use of generic solutions to establish investment needs at the smaller water treatment works appears to have led to a significant overestimate of the scope of the work required. Lack of strategic solutions also appears to have resulted in increased costs.

In assessing Scottish Water's drinking water quality proposals, the Reporter noted the following:

 The overlap of the water quality programme with work being carried out in Quality and Standards II, and in the capital maintenance programme in Quality and Standards III, had not been fully addressed.

- Generic solutions used for water treatment works did not take full account of site conditions.
- There appeared to be cases where significant engineering solutions were proposed at sites with relatively few water quality failures.
- For the smaller water treatment works, the form of the cost curve used had resulted in some marginal over-costing. The larger works were marginally under-costed, but the overall cost of the programme was inflated by around 2.7% as a result.

Following his assessment, the Reporter concluded that the issues identified in relation to project scoping at water treatment works resulted in Scottish Water's cost estimates being around 15% too high. This was based on the limited sample of eight sites, which were reviewed in detail.

The analysis carried out by Faber Maunsell concluded that there were significant issues concerning Scottish Water's methodology for assessing the scope of work required at water treatment works. At each of the sample water treatment works, Faber Maunsell assessed three key parameters:

- Need whether the project met the requirements of the Ministerial Guidance.
- Strategy to what extent the opportunity for strategic solutions had been assessed.
- Scope to what extent the work proposed at the site was over-scoped.

Each of these parameters was scored for the sample sites. These scores were then translated, using a standard matrix, into an assessment of the extent of over-scoping in the representative sample of projects. These findings were then applied to the overall programme.

¹⁷⁴ In total, Faber Maunsell completed 37 site visits. However, one of these sites was also visited by the Reporter.

Faber Maunsell found evidence of significant overscoping in each of the areas assessed. For example, when assessing 'need' they discovered sites in the representative sample where there was no clear requirement to carry out the proposed works. Examples included sites where Scottish Water proposed to fit a new 'membrane' treatment process where one already existed at the site.

They also found a number of sites where strategic solutions, such as rationalising the number of water treatment works, had not been taken into account.

Faber Maunsell also found that the use of generic solutions in the costing process had led to major overscoping of requirements. Examples included the provision of new lamella separators at works where there were already existing alternative processes which were either adequate to meet the requirements or could be augmented at minimum cost. Other examples included costing for the installation of contact tanks where Scottish Water had costed new tanks of the total required volume rather than adding additional volume to existing tanks.

From their analysis, Faber Maunsell concluded that the degree of over-scoping in Scottish Water's proposals for water treatment works justified a pre-efficiency reduction in costs of between 45% and 55%.

We have reviewed the Reporter's and Faber Maunsell's findings in detail. Following this review we have concluded that there is significant opportunity to reduce the scope of investment at water treatment works. Our assessment is that this reduction lies within the range of 30% to 50% of Scottish Water's estimate. This would reduce the total cost of the quality investment at water treatment works from £831 million to a highest estimated cost of £582 million and a current lowest realistic cost of £415 million. We have also reduced Scottish Water's assessment of programme overlap in the same range, ie a reduction of 30% to 50%.

We have reassigned the water mains rehabilitation investment into the capital maintenance expenditure requirements. This should allow synergies within the water mains replacement programme to be realised. This reduces the investment in the drinking water quality category by £22 million and increases the investment that we have allowed in capital maintenance by £17.5 million (£22 million less the efficiency target).

Water resources

The Reporter and our engineering consultants have assessed Scottish Water's proposed investment of £135 million on water resources. This is primarily associated with the Water Framework Directive¹⁷⁵. They both concluded that costs in this area are very uncertain.

The Reporter commented that Scottish Water had not yet identified and quantified new abstractions and that Scottish Water had therefore made significant assumptions in developing its proposals. The Reporter also noted that Scottish Water did not appear to have taken full account of the benefits available from leakage reduction.

The engineering consultants commented that further investigations (including the development of a water resources plan) are required to reduce uncertainties and that reducing leakage should be the preferred first choice for replacing lost supplies. They recommended that Scottish Water should establish economic levels of leakage in the water resource zones that are affected by the Water Framework Directive.

We have concluded that there is considerable uncertainty about costs in this area and there is a danger that customers' money will not be spent wisely. We therefore propose to reduce investment in this area in recognition of the investment that we have made available to Scottish Water to move towards the economic level of leakage.

We expect to have set an economic level of leakage no later than December 2007. The additional £40 million of capital maintenance investment that we have made available beyond that which would have been allowed by Ofwat should certainly be sufficient for Scottish Water to reach its economic level of leakage no later than the end of the 2010-14 regulatory control period. Companies in

¹⁷⁵ The Water Framework Directive element of the water resources expenditure amounts to £133.8 million. The remaining £0.9 million relates to flood studies to comply with the Reservoirs Act.

England and Wales were not allowed such significant investment to help them reach their economic levels of leakage.

Based on the Reporter's and Faber Maunsell's conclusions, we have reduced the proposed scope of investment in water resources by 30%. It is important to take account of the scope for leakage reduction in assessing the required scope for investment in water resources. This gives a highest estimated investment in this area of £94.3 million. If we were to take account of the £40 million allocation for leakage control in capital maintenance and reduce our estimate of over-scoping to 20%, this gives a current lowest realistic pre-efficiency cost estimate of £68 million.

Security enhancement

The Reporter reviewed Scottish Water's proposed investment of £76 million for security enhancement at water treatment works and other assets. He concluded that Scottish Water's estimates of the required scope of work appeared to be conservative in a number of areas. He has also suggested that the unit costs used in its assessment appear high.

We have concluded that a reduction of 20% in Scottish Water's assessment of the costs for security enhancement is appropriate. This reduces the assessed level of Scottish Water's investment requirements in this area from £76 million to £61 million.

We have not made any other adjustments to the scope of Scottish Water's proposals for drinking water quality investment.

The outcome of our review of the scope of the work required to meet the Ministers' objectives for drinking water quality is shown in Table 14.5.

Table 14.5: Outcome of our assessment of drinking water quality investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost Total 2006-10	Highest estimated cost	Current lowest realistic cost
Water treatment works	£830.8m	£581.6m	£415.4m
Water mains rehabilitation (DW5 iron and manganese)	£22.2m	£0.0m	£0.0m
Water resources (Water Framework Directive)	£134.7m	£94.3m	£67.8m
Security enhancement at water treatment sites	£76.4m	£61.1m	£61.1m
Customer requested lead pipe removal	£20.7m	£20.7m	£20.7m
Other minor elements	£30.2m	£30.2m	£30.2m
Scottish Water reduction for 'Programme overlap'	£-51.2m	£-35.9m	£-25.6m
Total 2006-10	£1063.7m	£752.0m	£569.6m

Review of planned investment in environmental objectives

Scottish Water's second draft business plan proposes investment of £845.2 million to meet the environmental objectives set out in the Ministerial Guidance. The breakdown of this investment by sub-category is shown in Table 14.6.

Table 14.6: Breakdown of Table C environmental quality investment into sub-category

Sub-categories	Project cost totals 2006-10
Unsatisfactory Intermittent Discharges	£680.6m
Sewage treatment work	£127.8m
Septic tank upgrade	£12.0m
Sludge treatment centre	£8.3m
IPPC schemes	£9.4m
Landfill Directive	£3.5m
Other minor programme elements	£3.6m
Total 2006-10	£845.2m

Over three-quarters of this investment relates to 280¹⁷⁶ schemes to address UIDs. In Ofwat's 2004 final determination for the companies in England and Wales, the total investment in 'AMP4' UIDs amounted to £816 million¹⁷⁷ to deliver 1,932 schemes. The average cost of a UID scheme for Scottish Water's proposals is approximately £2.5 million. This is nearly six times the

¹⁷⁶ This number includes 275 unsatisfactory combined sewer overflow or emergency overflow projects and five unsatisfactory surface water outfalls. It excludes 14 dual manhole projects.

¹⁷⁷ In 2002-03 prices.

average proposed scheme cost of £0.45 million¹⁷⁸ in England and Wales.

Our review of the environmental quality investment in Table C has indicated that the scope of the investment included in the programme has significantly inflated the costs of meeting Ministers' objectives. This involves:

- duplicate projects appearing in the programme;
- inclusion of investment at PPP works; and
- major over-scoping of the requirements of the UID programme.

Removal of duplicate project entries

The Reporter has identified a number of project lines in Table C of the second draft business plan that relate to duplicate entries in the programme. The projects shown in Table 14.7 have been removed from the 2006-10 programme.

Table 14.7: Projects removed from Table C programme

Project autocode	Project title	Project cost totals 2006-10
31187	UID - Duke Street Glasgow	£0.5m
31224	UID - Cairndhu	£1.7m
31258	UID - Cumberland Avenue	£0.5m
31301	UID - Helensburgh	£1.6m
31302	UID - Helensburgh	£0.5m
31304	UID - Sinclair Street	£0.5m
31308	UID - Gallowgate	£0.6m
31337	UID - Helensburgh No 5	£0.6m
31338	UID - Helensburgh No 6	£0.6m
31387	UID - Ladywell School	£0.5m
31393	UID - Barassie	£5.4m
31410	UID - Meadowhead	£15.9m
31457	UID - Helensburgh outfall No 4	£0.7m
31534	UID - Skellyton	£0.5m
31535	UID - Skellyton	£8.0m
31536	UID - Skellyton	£0.5m
31566	UID - Helensburgh	£0.8m
31570	UID - The Pavillion	£10.4m
	Total 2006-10	£49.8m

Removal of PPP schemes

Scottish Water has included capital investment at PPP waste water treatment schemes in its investment programme. We have sought legal advice on the contractual arrangements for these schemes. This advice indicated that, while contractual arrangements vary between sites, there may be scope to investigate whether or not Scottish Water is responsible for meeting the costs of the required improvements at these sites. It is also likely that, for both legal and practical reasons, it would not be possible for Scottish Water to own assets at PPP sites.

We have therefore concluded that the requirements for additional outputs at PPP sites would either be funded by the PPP contractors through existing contractual arrangements or through extensions of the existing contracts. We have therefore removed this funding from the baseline investment programme and allowed Scottish Water additional PPP operating costs. The PPP projects that have been removed and their associated costs are shown in Table 14.8.

Table 14.8: PPP projects removed from the investment programme¹⁷⁹

Category/ autocode	Project title	Table C 2006-10 project cost
Waste water treatment		
30515	Meadowhead W.W.T. Service	£15.1m
30905	Stevenston WWT Service (PFI STW) Upgrade	£12.9m
UIDs		
31411	Meadowhead Treatment Works Irvine	£21.2m
31551	Stevenston WWTP PFI F.F.T CSO	£8.6m
Sludge treatment		
30516	Meadowhead/Stevenson/Inverclyde - STC	£8.3m
	Total	£66.0m

In assessing the appropriate level of operating costs to allow Scottish Water, we have made a generous provision of just under £50 million of capital expenditure¹⁸⁰ and assumed operating costs of 2% of the capital cost. We have used the Ofwat allowed rate of return for the private sector water industry south of the border.

 $^{^{178}}$ In 2003-04 prices, assuming capital inflation of 5.46% from 2002-03 to 2003-04.

¹⁷⁹ Project 31410 (Meadowhead UID) also comprises investment at a PPP works that has already been removed as duplication.

¹⁸⁰ In setting the £50 million allowance for capital expenditure, we have taken account of both the scope for efficiency (see later in this chapter) and a small allowance to reflect the likely over-scoping of the required investment.

Scottish Water's proposed environmental quality programme, after removal of duplications and PPP schemes, is shown in Table 14.9.

Table 14.9: Environmental quality investment after removal of duplications and PPP schemes

Sub-categories	Project cost totals 2006-10
Unsatisfactory Intermittent Discharges	£601.0m
Sewage treatment work	£99.9m
Septic tank upgrade	£12.0m
Sludge treatment centre	£0.0m
IPPC schemes	£9.4m
Landfill Directive	£3.5m
Other minor programme elements	£3.6m
Total 2006-10	£729.3m

UID programme

The Reporter's review of Scottish Water's proposed investment in UIDs indicated a number of significant concerns relating to the scoping and costing of the programme. These included:

- the use of a generic approach to develop solutions, with no allowance for the possible development of integrated catchment solutions;
- insufficient modelling work being carried out accurately to size the required solution – this was particularly the case for the three major catchments that impact on the programme for Quality & Standards IIIa;
- a particular concern regarding the algorithm that was used to generate storage volumes for CSOs impacting on bathing and shellfish waters;
- high unit costs for schemes;
- concerns about the assessment of interconnecting pipework costs; and
- concerns about the percentage of on-costs applied to the UID programme.

We also analysed the cost of remedying UIDs south of the border and concluded that the proposed investment programme in Scotland seemed unduly large. The views of the Reporter and our own analysis led us to ask our independent engineering consultants to carry out a detailed review of the proposals. They undertook a comprehensive study of a representative sample of 40 of the UID schemes. They concluded that there was evidence of very significant over-scoping of the UID requirements. In particular, they found that:

- the use of a generic approach to costing was resulting in significant over-scoping of requirements;
- the assumptions underpinning the costing methodology resulted in significant over-scoping;
- inconsistent base information was used in the calculations;
- the formula for costing schemes with a bathing water driver was statistically flawed – this had led to oversized storage and compensation volumes; and
- there was no strategic approach to determining the investment requirements.

Examples of over-scoping of requirements included the following:

- The proposed solution for one UID project with an estimated cost of over £10 million was to fit a 1,120m³ storm tank and screen. Faber Maunsell concluded that the scheme as presented did not require a storage solution.
- An allowance at every site for a 50 metre x 4.5 metre access road and hard standing of 25m². In many cases the sites are on or adjacent to existing sites and roads.
- An assessed cost of £2.4 million for a storage volume of 70m³, equivalent to a standard double garage.

Examples of issues concerning base information included a project with a reported 'pass forward flow'¹⁸¹ of 0.001litres/second. This flow would take five minutes to fill a soft drink can. Such a low flow would seem to be unlikely and is either an error in information or of measurement.

¹⁸¹ This is the flow which passes downstream in the continuation pipe. Excess flows will be spilled over the weir and discharged to the receiving water body. The pass-forward flow at the point of first spill is referred to as the 'setting'.

Faber Maunsell identified concerns about Scottish Water's technical information at an early stage of their assessment. We sought to confirm the accuracy of the information with Scottish Water. In its initial response¹⁸², Scottish Water stated that:

"Through each stage in the development of the UID programme, Scottish Water has subjected the data to checks. This has included checks back to drainage area studies where appropriate. In several instances apparent anomalies from high-level checks have been investigated further and retained in the data set. Whilst it is never possible to state that there are no errors, we believe that we have undertaken appropriate checks."

We responded with a detailed enquiry pointing out the information about which we had concerns. Scottish Water later responded to confirm that there were, indeed, a number of issues with its information submission. This would appear to confirm the view that the UID programme assessment had suffered from poor quality information.

As an example of the lack of a strategic approach to determining the investment requirements in this area, Faber Maunsell commented on a scheme in Penicuik that:

"There is a desperate need for an overall strategy in respect to storage and screening requirements in view of the fact that there are many combined sewer overflows within the general locality. No such strategy has been demonstrated."

The lack of a strategic approach was evident throughout the programme and particularly for the three large catchments at Irvine (Meadowhead), Stevenston and Portobello, which make up around 65% of the Quality & Standards IIIa UID programme.

In assessing the representative sample of projects, Faber Maunsell used broadly similar scoring system to

that described above for water treatment works. They assessed the sites on the basis of the need for the project, the extent of strategic assessment of options and the extent of over-scoping of requirements. Based on their representative sample, Faber Maunsell concluded that the extent of over-scoping in the programme was sufficient to justify a reduction in the estimated costs of 58%.

We therefore concluded that the investment required on UIDs to meet the Ministers' environmental objectives is significantly lower than Scottish Water's assessment of £601 million¹⁸³.

Scottish Water is also fixing many UIDs during Quality and Standards II. A review of the Quality and Standards II baseline investment programme would suggest that a current unit cost of £0.42 million would be appropriate. This estimate includes an adjustment of the pre-efficiency amount that was made available to the three authorities for both the scope for efficiency and the impact of capital expenditure inflation since 2000-01. In England and Wales, the average pre-efficiency cost of 'AMP4' UID schemes in company submissions was £0.45¹⁸⁴ million. This would give a total programme cost of £126 million¹⁸⁵. We consider that this represents the current lowest realistic pre-efficiency cost of the UID programme. Based on their assessment of a representative sample of Scottish Water's UID programme, our engineering consultants have estimated the cost of Scottish Water's programme, properly scoped, to be around £252 million¹⁸⁶. This represents the highest estimated pre-efficiency cost for the UID programme.

Both the Reporter and our independent engineering consultants identified that effective delivery of the UID programme would require detailed modelling to demonstrate the interaction of discharges from the waste water systems and the receiving waters. This was particularly the case for the three major catchments that dominate the programme. The Reporter proposed that addressing the problems in these catchments should be

¹⁸² Email from Scottish Water to this Office, 20 May 2005.

¹⁸³ After removal of duplications and PPP works.

¹⁸⁴ Inflated to 2003-04 prices.

¹⁸⁵ After removal of duplications and PPP works and assuming 280 UID schemes.

¹⁸⁶ Based on the assessed reduction of 58% of the total UID programme cost, after the removal of duplications and PPP works.

postponed until the next regulatory control period.

After consultation with SEPA, we have allowed a further provision of £6 million for Scottish Water to carry out detailed modelling and study work to identify the optimum solutions for these catchments. We will require Scottish Water to demonstrate that this work has been completed to the satisfaction of SEPA and the Reporter, before investment in these catchments proceeds. Investment of £83 million to £167 million, representing the proportion of UIDs to be fixed in the three catchments of Meadowhead, Stevenston and Portobello, may only be committed after these studies have been agreed and completed.

In the event that the strategic studies indicate that extensive re-sewering is required in the catchment, this would be addressed either in an interim determination or in the next Strategic Review of Charges. Accordingly, our investment allowance for the catchments of Meadowhead, Stevenston and Portobello is a notified item for this review.

We have also noted that the projects associated with the Glasgow Strategic Drainage Plan (GSDP) are subject to strategic modelling. We will require Scottish Water to identify and present to the GSDP partners all of the Quality and Standards III schemes that exist within the Glasgow and Greater Glasgow drainage catchment areas, in order that key strategic drainage schemes are developed in a sustainable and cost efficient basis

Outcome of our assessment

Our conclusion on the appropriate scope of investment to meet the Ministers' objectives for improvements in environmental compliance is shown in Table 14.10.

We have accepted the Reporter's overall views on other aspects of the environmental quality programme and have decided that there is no need for a scoping adjustment to the proposed investment at sewage treatment works, septic tanks, surface water outfalls, IPPC schemes, landfill directive investment or other minor elements of the programme.

Table 14.10: Outcome of our assessment of environmental quality investment requirements (pre-efficiency)

Sub-categories	Adjusted Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost
Unsatisfactory Intermittent Discharges	£601.0m	£252.4m	£126.0m
Study work		£6.0m	£6.0m
UID sub-total		£258.4m	£132.0m
Sewage treatment work upgrade	£99.9m	£99.9m	£99.9m
Septic tank upgrade	£12.0m	£12.0m	£12.0m
IPPC schemes	£9.4m	£9.4m	£9.4m
Landfill Directive	£3.5m	£3.5m	£3.5m
Other minor programme elements	£3.6m	£3.6m	£3.6m
Total 2006-10	£729.3m	£386.8m	£260.4m

Review of planned investment on development constraints and first time connection

Scottish Water's second draft business plan proposes investment of £221 million to meet demand for new network capacity from new housing and businesses. It also proposes £70 million for the first time connection of existing properties to the public water and waste water networks. This is set out in Table 14.11.

Table 14.11: Breakdown of Table C development constraints and first time connections investment

Sub-categories	Project cost totals 2006-10
Development constraints Part 3	£66.9m
Development constraints Part 4	£144.0m
Development constraints water resources	£10.4m
Total development constraints ¹⁸⁷	£221.4m
First time provision Part 3	£40.2m
First time provision Part 4	£29.9m
Total first time provision ¹⁸⁸	£70.0m

Development constraints

Ministers set an objective that sufficient strategic capacity should be made available to accommodate 60,000 new homes and 2,025 hectares of new

¹⁸⁷ Totals do not add due to rounding.

¹⁸⁸ Totals do not add due to rounding.

commercial land to be connected to the public water and waste water networks.

Costs in this area have been split between 'Part 3' and 'Part 4' assets for both water and waste water. There is also an element for additional water resources to meet perceived increased demand. Part 3 assets relate to local network reinforcement costs associated with new development, such as increased capacity on water mains, sewers, service reservoirs or pumping stations. Part 4 assets include treatment works, reservoirs or outfalls.

The Scottish Executive is developing regulations in line with the requirements set out in the Water Environment and Water Services Act 2003. These regulations will require Scottish Water to be responsible for funding all Part 4 costs and providing a 'reasonable cost' contribution to Part 3 costs. Although the exact level of the reasonable cost contribution has yet to be determined, it is likely to be based on an assessment of the future income generated by the new connection and to be broadly in line with the situation in England and Wales.

The Reporter and our engineering consultants conducted a detailed review of the methodology employed by Scottish Water to estimate the investment required to release development constraints. Particular comments included the following:

Part 4 expenditure

- Current levels of leakage have been assumed. No allowance has been made for leakage reduction to meet increasing demand. We have allowed an additional £40 million¹⁸⁹ for improved leakage control in this draft determination.
- Scottish Water's estimate of water demand from industrial/commercial properties appears high and is inconsistent with comments in its business plans about the revenue base.
- Particularly for its smaller waste water treatment works, Scottish Water does not have good quality

flow and load data on which to determine whether works are overloaded or not.

- Scottish Water has included PPP works in its assessment of upgrade costs.
- Due to the methodology employed, the levels of expenditure requirement generated by relatively small developments are high.
- Scottish Water's projections of capacity restrictions are being made against a background of a forecast decline in population in Scotland.

Part 3 expenditure

- Scottish Water has calculated the reasonable contribution to Part 3 household costs as a 12-year net present value calculation based on the average charge for customers. A real discount rate of 0.72% was used, based on the proposed WICS rate of return on the regulatory capital value.
- For industrial/commercial properties a contribution of £23,600 per hectare has been used. The basis for this contribution is uncertain. Scottish Water has assumed that the full contribution would be payable whenever the site is constrained.
- A constraint has been defined as a service reservoir having less than 12 hours storage time or a CSO that has either been deemed as unsatisfactory or has been subject to a sewer flooding incident.
- No account has been taken of the CSOs being upgraded or improved under other categories of the investment programme or of the internal flooding issues being addressed in Quality and Standards II and III.

Resources

 Scottish Water has not related actual identified development constraint areas to constrained water resource zones. It is not possible, therefore, to identify whether or not water resource issues will arise in practice. Scottish Water has assumed that

¹⁸⁹ See Chapter 13 of this volume.

75% of the new development will be in water resource areas with potential deficiencies, whereas only 50% of water resource areas are in deficit against Scottish Water's desired standard.

Scottish Water has assumed that 50% of domestic developments and 90% of industrial/commercial developments will provide new demand within the zone. These figures appear very high, particularly given the current trends in overall population and economic growth. It is not clear whether these figures are consistent with the revenue base projections that are contained in Scottish Water's draft business plans.

The Reporter concluded that Scottish Water's estimates of the nature of (and the cost of resolving) development constraints were very uncertain.

Our assessment of funding requirements for development constraints

Scottish Water's proposed investment in this area appears to be high. In particular we note the following:

- Part 4 costs included investment relating to capacity at PPP works. We consider that if such investment is required, it should be met either under the existing contract or through a contractual amendment¹⁹⁰.
- Scottish Water's modelling of the actual requirements has been limited. This is likely to result in over-scoping of requirements.
- Scottish Water's assessment appears not to have taken account of synergies with other parts of the investment programme, such as leakage control, water treatment works upgrades and the UID programme.
- The assessment of costs appears to use 'worst case' scenarios in areas such as the likely level of reasonable cost contributions and the extent of water resource upgrades that are required.
- The Scottish Executive has also commented that it is expected that a recently agreed Memorandum of Understanding between SEPA and Scottish Water

should reduce the level of constraint at a number of waste water treatment works.

Scottish Water has assumed a very low discount rate (0.72%) in its assessment of the value of a new customer. This has resulted in the value of the customer being exaggerated and therefore the reasonable cost contribution overstated. This discount rate is consistent with the post-tax real discount rate that we have allowed Scottish Water in this draft determination (before our increased allowance for embedded debt). However, it is not clear that this rate should be used in the calculation of the value of a customer. Using a rate of 0.72% gives the connecting customer the benefit of both the public sector cost of capital and the benefit of the tax shield on Scottish Water's borrowing. We consider that this significantly overvalues the future value of revenues from new customers.

We have therefore decided that the discount rate should be in the range 2.1%, which is the real pre-tax cost of capital, and 4.25% which is based on the methodology applied in England and Wales (6.75% cost of capital minus 2.5% for inflation). This reduces the contributions payable under Part 3 by between 8.3% and 19.3%.

In its methodology for assessing Part 3 costs, Scottish Water has used the approach that is currently adopted south of the border to assess the likely level of the contribution. However, it has not included the infrastructure charge that is normally paid for connecting to the water and sewerage system south of the border. To be properly consistent with an approach that uses the England and Wales model, the contribution to Part 3 costs should be stated net of the infrastructure charge that would be payable. This net amount is the cost that has to be met by the existing customer base. If we assume the average England and Wales charge of £250 for both water and waste water, this equates to a £30 million contribution for 60,000 houses. We have not included an infrastructure charge for commercial property. Such a charge would further reduce the net contribution that has to be made by existing customers.

We have not sought to challenge Scottish Water's assumptions on the extent to which contributions will be required.

If, in practice, Scottish Water's efficiently incurred level of reasonable cost contributions is higher than our estimate, we would expect Scottish Water to seek an interim determination. The regulations relating to connection costs are a notified item in this draft determination.

Based on the comments provided by the Reporter and our independent engineering consultants, we consider that the allowance for Part 4 costs for both water and waste water, and for water resources, should be reduced by between 15% and 25%. Our view is that the investment identified by Scottish Water has taken insufficient account of opportunities for leakage reduction and the benefits of both Quality and Standards II investment and that proposed elsewhere under this programme. Moreover, the investment includes investment at PPP sites and appears in many instances to be over-scoped.

These changes give a highest estimated cost for development constraints (pre-efficiency) of £193 million and a current lowest realistic cost of £170 million¹⁹¹.

First time provision

We have reviewed the Reporter's and our independent engineering consultant's comments on Scottish Water's proposed investment for first time provision of water and waste water services to existing houses.

We have noted similar concerns to those expressed for development constraints above. In particular, the assessment of the Part 3 reasonable cost contribution has been carried out on a similar basis. We therefore propose to reduce the investment requirement to compensate for the contribution from the infrastructure charge and a more appropriate discount rate. In the absence of information on the likely number of properties to be involved, we have assessed the likely level of infrastructure charge contribution on a pro-rata basis from the development constraint funding proposals¹⁹².

We have also reduced the investment required for Part 4 constraints by between 15% and 25%, consistent with our approach for development constraints and for the same reasons. We note, however, that first time provision for water does not appear to form part of the Ministerial Guidance of February 2005. We will therefore require confirmation from Scottish Water that this investment is associated with meeting the Ministers' objectives.

The highest estimated cost for first time provision then becomes £62 million and the current lowest realistic cost £55 million ¹⁹³.

A summary of our assessment of the pre-efficiency baseline investment programme for expenditure on development constraints and first time provision is shown in Table 14.12.

¹⁹¹ Both costs include a £30 million contribution from connecting customers through the infrastructure charge.

¹⁹² Scottish Water has proposed a total of £211 million for development constraints and £70 million for first time provision. On a pro-rata basis, the £30 million infrastructure charge income for development constraints becomes £10 million for first time provision.

¹⁹³ Both costs include a £10 million contribution from connecting customers through the infrastructure charge.

Table 14.12: Outcome of our assessment of development constraints and first time connections investment requirements (pre-efficiency)

Sub-categories	Original Table C project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost	Contribution from connecting customers (infrastructure charge)	Highest estimated cost - contribution from customer base	Currrent lowest realistic cost - contribution from customer base
Development constraints Part 3	£66.9m	£61.4m	£54.0m	£30.0m	£31.4m	£24.0m
Development constraints Part 4	£144.0m	£122.4m	£108.0m		£122.4m	£108.0m
Development constraints water resources	£10.4m	£8.9m	£7.8m		£8.9m	£7.8m
Total development constraints	£221.4m	£192.7m	£169.9m	£30.0m	£162.7m	£139.9m
First time provision Part 3	£40.2m	£36.9m	£32.4m	£10.0m	£26.9m	£22.5m
First time provision Part 4	£29.9m	£25.4m	£22.4m		£25.4m	£22.4m
Total first time provision	£70.0m	£62.2m	£54.8m	£10.0m	£52.3m	£44.9m
Total for growth investment	£291.4m	£254.9m	£224.7m	£40.0m	£214.9m	£184.7m

Review of planned investment on customer service

Scottish Water's second draft business plan proposes £84.1 million of investment to meet Ministers' objectives for improvements to customer service, as shown in Table 14.13.

Table 14.13: Breakdown of Table C customer service investment

Sub-categories	Project cost totals 2006-10
Pressure management	£5.7m
Odour management	£19.1m
Business metering	£0.7m
Sewer flooding	£58.6m
Total 2006-10	£84.1m

Our review of costs for pressure management and sewer flooding indicates that they are broadly consistent with pre-efficiency costs in England and Wales. Odour management costs are subject to some uncertainty given that the process for identifying the 35 sites to be addressed under Quality and Standards III is still underway. We have therefore concluded that we will not make any reductions to the scope of investment in these areas.

Business metering costs have been excluded because we have separately allowed metering costs and capital

costs relating to the separation of retail activities. We have added £15 million to cover the capital cost of establishing a separate retail entity and facilitating non-household competition in accordance with the requirements of the Water Services etc. (Scotland) Act 2005.

Table 14.14 summarises our assessment of the customer service investment necessary to meet the Ministers' objectives.

Table 14.14: Outcome of our assessment of customer service investment requirements (pre-efficiency)

Sub-categories	Project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost
Pressure management	£5.7m	£5.7m	£5.7m
Odour management	£19.1m	£19.1m	£19.1m
Business metering	£0.7m	£0.0m	£0.0m
Sewer flooding	£58.6m	£58.6m	£58.6m
Introduction of competition	£0.0m	£15.0m	£15.0m
Total 2006-10	£84.1m	£98.4m	£98.4m

Summary of changes to the scope of the investment programme

A summary of the changes to the baseline investment programme resulting from our review process is shown in Table 14.15.

Table 14.15: Summary of the proposed changes to the baseline investment programme

Investment category	Project cost totals 2006-10	Highest estimated cost	Current lowest realistic cost
Drinking water quality	£1063.7m	£752.0m	£569.6m
Environmental	£845.2m	£386.8m	£260.4m
Customer service + initial retail investment	£84.1m	£98.4m	£98.4m
Growth (Contribution from customer base)	£291.4m	£214.9m	£184.7m
Total 2006-10	£2,284.4m	£1,452.2m	£1,113.1m

Efficient delivery of the baseline programme

In the previous sections we established the cost of delivering the required scope of investment in improved quality, network growth and customer service at Scottish Water's current level of efficiency. The next stage in our assessment process is to establish the impact of efficiency improvements on this level of investment.

In Chapter 7, we explained how we use Ofwat's cost base approach to determine the scope for efficiency in the enhancement programme.

Ofwat's approach uses capital works standard costs, or the 'cost base', to assess the relative efficiency of water companies in procuring and implementing capital projects. The cost base is a database of costs, termed 'standard costs' for a wide range of standardised projects, or units of work. These standardised projects are typical of investment in the water industry. There are standardised projects for the water and sewerage services. The standard costs represent the work required to complete the investment programme. Ofwat can compare the standard costs submitted by the water and sewerage companies to assess relative procurement efficiency.

We needed to be sure that the cost estimates in Scottish Water's investment programme were fully consistent with the information contained in Scottish Water's cost base. The detailed list of investment projects and their costs allowed the Reporter and Faber Maunsell to ensure that the cost base is consistent with the costs for the projects in the investment programme.

194 Cost base efficiency gap (%).

We commissioned Faber Maunsell to assist with our analysis of relative capital cost efficiency using the cost base approach. Faber Maunsell reviewed the standard costs submitted by Scottish Water to ensure that they were consistent with Scottish Water's investment programme and Ofwat's benchmark costs. When Faber Maunsell were satisfied with the cost information, we assessed the procurement efficiency gap, expressed as a percentage of total investment separated by water and sewerage, infrastructure and non-infrastructure. The cost base factors that resulted from this analysis are shown in column 1 of Table 14.16¹⁹⁴. Chapter 7 explains how we have calculated the efficiency gap.

Table 14.16: Capital efficiency factors applied to the quality, growth and customer service investment for the highest estimated cost investment programme

	Cost base efficiency gap	Reduction required to close 75% of gap	Additional reduction required to match 'continuing improvement' by water companies	Total reduction required
Water				
Infrastructure	23.5%	17.6%	3.7%	20.7%
Non-infrastructure	25.7%	19.3%	3.7%	22.3%
Weighted average	25.6%	19.2%	3.7%	22.2%
Sewerage				
Infrastructure	17.2%	12.9%	4.4%	16.7%
Non-infrastructure	29.8%	22.4%	4.4%	25.8%
Weighted average	22.4%	16.8%	4.4%	20.5%
Combined				
Infrastructure	17.9%	13.4%	4.3%	17.2%
Non-infrastructure	26.7%	20.0%	3.9%	23.1%
Weighted average	24.2%	18.2%	4.0%	21.4%

In line with the recommendations of the Competition Commission¹⁹⁵, we have phased the efficiency challenge for Scottish Water over three years. Tables 14.17 and 14.18 set out the impact of the phased reductions on the highest estimated cost investment programme.

Table 14.17: Reductions in the allowed level of capital expenditure (%) for the highest estimated cost investment programme

	% reduction required to achieve efficiency target:						
	2006-07 (25% gap closure)	2007-08 (50% gap closure) 2008-09 (75% gap closure) 2009-10 (7		2009-10 (75% gap closure)			
Water	7.2%	14.4%	21.4%	22.0%			
Sewerage	6.6%	13.1%	19.5%	20.3%			
Weighted average	7.0%	13.8%	20.6%	21.2%			

Table 14.18: Reductions in the allowed level of capital expenditure (£m) for the highest estimated cost investment programme

	£m reduction required to achieve efficiency target:						
	2006-07 (25% gap closure)	2007-08 (50% gap closure)	2008-09 (75% gap closure)	2009-10 (75% gap closure)			
Water	£7.8m	£29.1m	£47.5m	£51.5m			
Sewerage	£5.4m	£20.1m	£32.7m	£35.8m			
Total	£13.2m	£49.2m	£80.2m	£87.2m			

¹⁹⁵ The Competition Commission's consideration of the price limits for Mid Kent Water and Sutton & East Surrey Water Services in 2000.

The cost base factors and their impact on investment depend on the composition of the investment programme. Tables 14.19 to 14.21 repeat the cost base analysis shown in Tables 14.16 to 14.18, this time for the current lowest realistic cost programme.

Table 14.19: Capital efficiency factors applied to the quality, growth and customer service investment for the lowest realistic cost investment programme

	Cost base efficiency gap	Reduction required to close 75% of gap	Additional reduction required to match 'continuing improvement' by water companies	Total reduction required
Water				
Infrastructure	23.5%	17.6%	3.7%	20.7%
Non-infrastructure	25.3%	19.0%	3.7%	22.0%
Weighted average	25.2%	18.9%	3.7%	21.9%
Sewerage				
Infrastructure	18.2%	13.7%	4.4%	17.4%
Non-infrastructure	29.7%	22.3%	4.4%	25.7%
Weighted average	24.2%	18.2%	4.4%	21.8%
Combined				
Infrastructure	19.1%	14.3%	4.3%	18.0%
Non-infrastructure	26.7%	20.0%	3.9%	23.1%
Weighted average	24.7%	18.6%	4.0%	21.8%

Table 14.20: Reductions in the allowed level of capital expenditure (%) for the lowest realistic cost investment programme

	% reduction required to achieve efficiency target:						
	2006-07 (25% gap closure)	osure) 2007-08 (50% gap closure) 2008-09 (75% gap closure) 2009-10 (75%					
Water	7.1%	14.2%	21.1%	21.7%			
Sewerage	7.1%	14.0%	20.9%	21.6%			
Weighted average	7.1%	14.1%	21.0%	21.6%			

Table 14.21: Reductions in the allowed level of capital expenditure (£m) for the lowest realistic cost investment programme

	£m reduction required to achieve efficiency target:					
	2006-07 (25% gap closure)	% gap closure) 2007-08 (50% gap closure) 2008-09 (75% gap closure) 2009-10 (75%				
Water	£5.6m	£20.8m	£33.9m	£36.8m		
Sewerage	£4.4m	£16.3m	£26.5m	£28.9m		
Total	£9.9m	£37.1m	£60.4m	£65.7m		

The lowest estimated efficiency gap averaged over the phased programme is 15.4%. The highest realistic efficiency gap calculated over the entire programme is 20.8%.

As discussed in Chapter 7, the results of the engineering consultants work were reviewed by SMC (Strategic Management Consultants) and by Ofwat. SMC reported that, following Faber Maunsell's review, Scottish Water's cost base coverage and consistency was in line with England and Wales and that our Office had properly carried out all of Ofwat's cost base activities. SMC also commented that the Faber Maunsell audit trails were clear and concise and directed to achieve compliance with Ofwat's guidelines. SMC was satisfied that the level of scrutiny was equivalent to that applied in England and Wales.

We have applied these cost base factors to our range of pre-efficiency baseline investment programme estimates in Table 14.15. We do not, of course, apply these reductions to the Part 3 costs for development constraints and first time provision. These Part 3 costs are payments of reasonable cost to customers and it would not be appropriate to apply an efficiency reduction to them.

Assessment of the level of investment included in the financial model

Scottish Water's investment plan, as outlined in its draft business plans, was significantly larger than we had expected. In our view the Ministers' objectives were clear and consistent with the results of the Quality and Standards III process. It has therefore been important to examine in detail the capital programme that Scottish Water put forward in order to understand why it was so much larger than we expected. We are grateful to Black and Veatch, Faber Maunsell, Ofwat and John Banyard for their comments on the proposed capital programme. Around eight man months of effort have been dedicated to the review of this capital programme.

However, it is likely that we will seek to undertake further work on the proposed programme during the next few weeks.

Our initial conclusions are that Scottish Water took a particularly conservative view of what was required, with the result that both the scope and the unit cost of the proposed programme were significantly inflated. However, we are continuing to review the evidence provided by the Reporter and our independent consultants. Likewise, our work with Ofwat on the costing and scoping of the investment programme is on-going.

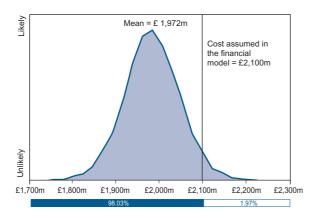
Unless significant new information becomes available, we expect that our assessment of the final level of investment required to meet all of the 'essential' and 'desirable' objectives set by Ministers could be materially lower than the top end of the ranges that we have outlined above.

In setting a level of capital investment for the financial model, we have taken account of the scope for efficiency and the range of investment we believe could be required. We examined each category of capital investment where we had identified a range of possible costs. We assumed that there was only a 5% chance of costs being lower than the minimum values that we identified, and a 5% chance of costs being higher than the maximum values. Where no range was identified, we assumed that the cost value was firm. We carried out a risk analysis that combined the ranges that we had estimated. The result of this analysis was a probability distribution for the cost of the entire capital programme. Figure 14.1 shows this.

¹⁹⁶ John Banyard OBE is an expert in asset management and has advised this Office in the preparation of this draft determination. He was formerly a member of the Board of Severn Trent plc.

¹⁹⁷ A man month is the equivalent of one person working for one month. This does not include work carried out by this Office, the Reporter or Ofwat. Nor does it include work on the cost base.

Figure 14.1: Results of risk analysis on capital investment costs 2006-10



This analysis suggests that, given the ranges we described above, there is less than a 2% chance that the required capital programme will exceed our estimate of £2,100 million (2003-04 prices). This includes Scottish Water's full claim for the Quality and Standards II overhang¹⁹⁸. We have also taken account of the unsubstantiated claim for capital expenditure efficiency made by the former East of Scotland Water Authority in 2001¹⁹⁹.

We have conducted a thorough review of the proposed capital programme so that customers can benefit from delivery of the objectives set out in the Ministerial Guidance of February 2005 at the lowest reasonable overall cost.

Phasing of the investment

In the financial model we have phased this investment as set out in Table 14.22.

Table 14.22: Phasing of capital investment in the financial model

	2006-07	2007-08	2008-09	2009-10	Total
Capital investment in 2003-04 prices	£484.6m	£516.7m	£534.1m	£564.5m	£2,100.0m
Capital Investment in estimated outturn	£534.3m	£593.0m	£633.3m	£689.5m	£2,450.1m

We believe that this phasing is realistic. Most of the water quality objectives have to be met by the end of year 3 of the regulatory control period. In the absence of

this deadline, it is likely that the phasing could have been more skewed towards the latter half of the regulatory control period. This skewing towards the

¹⁹⁸ Adjusted only for inflation in the next regulatory control period. It would not, in our view, be reasonable to ask customers to pay more because of the late delivery of the Quality and Standards II investment programme.

¹⁹⁹ See background in Chapter 6.

latter half of the regulatory control period reflects the need for significant work to define the optimum investment strategy in several areas of the capital programme. By providing targeted funding to carry out study work on the UID programme and address leakage issues, we have sought to compensate for the lack of a skewing towards the latter half of the period.

Summary

Scottish Ministers set Scottish Water clear objectives to improve drinking water quality, environmental performance and customer service over the next regulatory control period. They set both essential objectives (to be delivered irrespective of the implications for customers' bills) and desirable objectives (to be delivered subject to the scope for efficient delivery and subject to prices remaining stable). Customers will wish to be assured that the significant investment required to deliver these objectives is delivering value for money.

Our detailed review of Scottish Water's investment proposals for improved quality, network growth and customer service has identified significant scope for reduction in Scottish Water's assessed cost. This primarily relates to over-scoping of requirements for investment in water treatment works, unsatisfactory intermittent discharges and tackling development constraints. Based on the advice of the Reporter and our independent engineering consultants, we have identified that the quality investment programme may have been over-scoped by up to £1,171 million. In our judgement, based on all of the evidence available to us, it is unlikely that the extent of this over-scoping is less than £832 million.

We have also assessed the scope for Scottish Water to improve the efficiency of its capital delivery. The scope for efficiency is obviously dependent on the make-up of the capital programme. However, our analysis has shown that the scope for improvement is up to 20.8%. The minimum scope for improvement given our analysis of the capital programme is 15.4%.

In this draft determination, we have proposed charge caps that reflect a capital programme of £2,100 million.

This includes Scottish Water's claim for the overhang from Quality and Standards II and the unsubstantiated efficiency claim of the former East of Scotland Water Authority. Our analysis has suggested that there is less than a 2% chance that this figure will need to increase – unless significant new information from Scottish Water becomes available.

The result is that this draft determination has financed the delivery of both the essential and desirable objectives that were outlined in February's Ministerial Guidance.

Section 4: Funding capital expenditure Chapter 15: Summary of capital expenditure allowed to deliver the Ministers' objectives

Introduction

In Chapter 7 we explained our approach to reviewing the capital programme and ensuring that the programme would deliver the Ministers' objectives for the water industry in Scotland. In Chapters 13 and 14 we explained in detail how we have set the level of expenditure that we have included in this draft determination. Our analysis took account of both the scope for efficiency and the initial conclusions of our detailed programme review. It is important to emphasise that we have not amended or limited the Ministers' objectives for the industry. We have allowed sufficient capital expenditure to meet all of the essential and desirable objectives set out in February's Ministerial Guidance.

This chapter summarises the results of the previous two chapters. It draws together detailed information about what Scottish Water included in the investment plan contained in its second draft business plan and the allowed level of capital expenditure that we have included in this draft determination.

Capital maintenance

In its second draft business plan, Scottish Water said that it needed total capital maintenance of £1,085 million. A proportion of this capital maintenance was required to facilitate the delivery of the quality and growth programme. We have assessed the highest estimated level of capital maintenance required as £780 million and the current lowest realistic level as £647 million.

In setting capital maintenance at this level we have been conscious of the need for Scottish Water to improve its understanding of its assets. We have also taken account of the spend to save allowance that we made available to Scottish Water in the Strategic Review of Charges 2002-06. One of the purposes of allowing spend to save was to finance the required improvement in asset knowledge.

In Table 15.1 we have set out the capital maintenance that Scottish Water included in its second draft business plan. We have also set out the level of capital maintenance that we have allowed.

Table 15.1: Allowed level of capital maintenance 2006-10

	2006-07	2007-08	2008-09	2009-10	Total		
Scottish Water Business plan							
Water Service	£145.8m	£168.8m	£215.8m	£164.8m	£695.2m		
Wastewater Service	£94.4m	£91.1m	£99.5m	£104.5m	£389.6m		
Total	£240.3m	£259.9m	£315.3m	£269.3m	£1,084.8m		
Draft Determination		•	•				
Capital Maintenance current lowest realistic	£90.9m	£171.1m	£187.3m	£197.6m	£646.9m		
Capital Maintenance highest estimated	£109.6m	£206.3m	£225.9m	£238.3m	£780.01m		

Water quality investment

In its second draft business plan, Scottish Water said that it needed to invest £1,064 million to meet the water quality standards set out in the Ministerial Guidance. This amount was sufficient to deliver both the essential and the desirable objectives set by the Ministers. We have established the highest estimated cost of water quality investment as £636 million and the current lowest realistic cost as £451 million.

In Table 15.2 we set out the water quality investment that Scottish Water included in its second draft business plan. We also set out the level of water quality investment that we have allowed.

Table 15.2: Allowed level of water quality investment 2006-10

	2006-07	2007-08	2008-09	2009-10	Total		
Scottish Water Business plan							
Water quality	£100.6m	£244.6m	£549.0m	£169.5m	£1,063.7 m		
Draft Determination							
Currrent lowest realistic cost	£63.4m	£119.3m	£130.6m	£137.8m	£451.1m		
Highest estimated cost	£89.4m	£168.3m	£184.2m	£194.3m	£636.2m		

Waste water quality investment

In its second draft business plan, Scottish Water said that it needed to invest £845 million to meet the waste water quality improvement objectives that were set by the Ministers. These investment objectives can be divided into addressing unsatisfactory intermittent discharges (UIDs), investment in improving sewage treatment works

and other waste water activities. We have assessed the highest estimated cost of this investment at £327 million and the current lowest realistic cost at £206 million.

In Table 15.3 we set out the investment in waste water improvements that Scottish Water included in its second draft business plan. We also set out the level of waste water investment that we have allowed.

Table 15.3: Allowed level of waste water improvement investment 2006-10

	2006-07	2007-08	2008-09	2009-10	Total		
Scottish Water Business plan							
UIDs	£11.1m	£23.5m	£211.5m	£434.5m	£680.6m		
Sewage treatment works	£4.0m	£10.1m	£56.4m	£57.3m	£127.8m		
Other	£4.9m	£6.6m	£14.6m	£10.8m	£36.8m		
Waste water quality total	£19.9m	£40.2m	£282.5m	£502.6m	£845.2m		
Draft Determination							
Waste water quality current lowest realistic	£29.0m	£54.5m	£59.7m	£63.0m	£206.2m		
Waste water quality highest estimated	£46.0m	£86.5m	£94.8m	£99.9m	£327.2m		

This includes a provision of £6 million (pre-efficiency) for Scottish Water to carry out modelling work for three large UID catchments around Meadowhead, Stevenston and Portobello. Investment at these catchments may only proceed after these studies have been agreed and completed.

Customer service investment

In its second draft business plan, Scottish Water said that it needed to invest £84 million to meet customer service investment objectives set by the Ministers. These objectives relate primarily to issues such as addressing odour concerns, improving water pressure and tackling sewer flooding. We have assessed the highest estimate of this investment at £83 million and the lowest realistic cost at £78 million. This includes an additional £15 million to address the investment requirements, which result from the introduction of the Water Services etc. (Scotland) Act 2005.

In Table 15.4 we set out the investment in customer service outputs that Scottish Water included in its second draft business plan. We also set out the level of investment that we have allowed.

Table 15.4: Allowed level of customer service investment 2006-10

	2006-07	2007-08	2008-09	2009-10	Total		
Scottish Water Business plan							
Customer service	£9.4m	£29.6m	£25.8m	£19.3m	£84.1m		
Draft Determination							
Currrent lowest realistic cost	£17.8m	£19.9m	£19.6m	£20.6m	£78.0m		
Highest estimated cost	£19.0m	£21.3m	£20.9m	£22.1m	£83.3m		

Investment in growth and relieving development constraints

In its second draft business plan, Scottish Water said that it needed to invest £291 million in relieving development constraints and providing first time connections to the network. We have assessed the highest estimated cost of this investment at £191 million and the lowest realistic cost at £156 million. This is a larger proportion of any capital programme than is currently funded south of the border.

In Table 15.5 we set out the investment in relieving development constraints and providing first time connections to the network that Scottish Water included in its second draft business plan. We also set out the level of investment that we have allowed. 'Part 3' contributions have been set to reflect the requirements of the statutory instrument that the Scottish Executive will introduce in due course and have not been subject to an efficiency challenge.

Table 15.5: Allowed level of investment in relieving development constraints 2006-10

	2006-07	2007-08	2008-09	2009-10	Total		
Scottish Water Business plan							
Development Constraints 'Part 3'	£6.4m	£19.7m	£20.1m	£20.7m	£66.9m		
Development Constraints 'Part 4'	£14.4m	£43.2m	£43.2m	£43.2m	£144.0m		
Development Constraints Water Resources	£1.0m	£3.1m	£3.1m	£3.1m	£10.4m		
Total Development Constraints	£21.9m	£66.0m	£66.5m	£67.1m	£221.4m		
First Time Provision 'Part 3'	£4.0m	£12.0m	£12.1m	£12.1m	£40.2m		
First Time Provision 'Part 4'	£3.0m	£9.0m	£9.0m	£9.0m	£29.8m		
Total First Time Provision	£7.0m	£21.0m	£21.0m	£21.0m	£70.0m		
Total growth	£28.9m	£87.0m	£87.5m	£88.1m	£291.4 m		
Draft Determination							
Total growth current lowest realistic	£21.9m	£41.2m	£45.2m	£47.6m	£156.0m		
Total growth highest estimated	£26.8m	£50.5m	£55.3m	£58.3m	£190.8m		

Our assessment of 'Part 3' costs does not include an extra contribution from connectees of £40 million. Investment in meeting development constraints should be agreed with the Capital Monitoring Group.

Investment at PPP sites

In its second draft business plan, Scottish Water said that it needed to invest some £66 million at or adjacent

to PPP sites in order to meet the objectives set by the Minister. We have allowed this investment after adjustments for efficiency and taking account of the scope for funding through amendments to the existing PPP contracts. This has been funded through an increase in the allowed level of PPP operating costs.

Conclusion

In its second draft business plan, Scottish Water said that it needed to invest £3,369 million over four years. This would have been more than 20% larger than the largest four-year investment programme ever delivered in the water and sewerage industry in the UK. We have identified significant over-costing and over-scoping of the investment programme. In addition, analysis of Scottish Water's cost base suggests that there is significant scope to improve its efficiency.

We have taken these factors into account in setting an appropriate level of capital expenditure. We have established the highest estimated total allowable capital expenditure as £2,216 million and we have also established the current lowest realistic allowable capital expenditure as £1,736.2 million. These figures include an allowance of £198.1 million for the completion of Quality and Standards II as discussed in Chapter 6.

We summarise the allowed investment in Table 15.6.

Table 15.6: Allowed level of capital expenditure 2006-10

	2006-07	2007-08	2008-09	2009-10	Total
Draft Determination					
Capital Maintenance current lowest realistic	£90.9m	£171.1m	£187.3m	£197.6m	£646.9m
Capital Maintenance highest estimated	£109.6m	£206.3m	£225.9m	£238.3m	£780.0m
Water Quality current lowest realistic	£63.4m	£119.3m	£130.6m	£137.8m	£451.1m
Water Quality highest estimated	£89.4m	£168.3m	£184.2m	£194.3m	£636.2m
Waste Water Quality current lowest realistic	£29.0m	£54.5m	£59.7m	£63.0m	£206.2m
Waste Water Quality highest estimated	£46.0m	£86.5m	£94.8m	£99.9m	£327.2m
Customer Service current lowest realistic	£9.3m	£17.5m	£19.1m	£20.2m	£66.1m
Customer Service highest estimated	£9.9m	£18.7m	£20.4m	£21.6m	£70.6m
Growth current lowest realistic	£21.9m	£41.2m	£45.2m	£47.6m	£156.0m
Growth highest estimated	£26.8m	£50.5m	£55.3m	£58.3m	£190.8m
Introduction to competition lowest estimated	£8.5m	£2.4m	£0.5m	£0.5m	£11.9m
Introduction to competition highest estimated	£9.1m	£2.6m	£0.5m	£0.5m	£12.7m
Total Quality and Standards III current lowest realistic	£222.9m	£406.1m	£4,42.4m	£466.7m	£1,538.2m
Total Quality and Standards III highest estimated	£290.8m	£532.8m	£5,81.1m	£612.9m	£2,017.5m
Overhang from Quality and Standards II	£224.6m	£28.4m	-	-	£253.0m
ESWA unsubstantiated efficiency adjustment	-£14.4m	-£13.9m	-£13.5m	-£13.1m	-£54.9m
Grand Total current lowest realistic	£433.2m	£420.6m	£428.9m	£453.5m	£1,736.2m
Grand Total highest estimated	£501.0m	£547.3m	£567.5m	£599.8m	£2,215.6m

Section 4: Funding capital expenditure Chapter 16: Depreciation

Introduction

Depreciation is the mechanism by which we recognise that the effectiveness and value of assets declines over time. This is a cost that should be borne by customers as they receive the benefit from use of the assets. Although effective asset management can help to reduce asset replacement costs, depreciation will continue to have a major impact on customers' bills.

From a regulatory point of view, the depreciation policy of the water and waste water business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge to be recovered from customers' charges.

There are two types of depreciation charge:

- a standard depreciation charge on the noninfrastructure assets (treatment plants, offices, vans, computers etc); and
- an infrastructure renewals charge for infrastructure assets (essentially the water mains and sewers).

In Chapter 13, we explained how we have established the infrastructure renewals charge for this draft determination. In this chapter we explain how we have established the depreciation charge for non-infrastructure assets. We have used the same approach to non-infrastructure depreciation as Ofwat uses for the water and waste water companies in England and Wales.

The depreciation charge has a direct impact on the prices that customers pay. The higher the charge, the higher the price to customers; the lower the charge, the lower the price to customers. The charge should reflect the cost of maintaining the above ground assets in a sustainable and serviceable manner. It is, therefore, important that Scottish Water's depreciation policy accurately reflects the diminishing value of the assets over time.

In this chapter we first discuss the importance of setting an accurate depreciation charge. We then look at different approaches to establishing the depreciation charge and the resulting range of values for Scottish Water. Finally we explain our view of the appropriate depreciation charge for Scottish Water.

The importance of depreciation in this Strategic Review

In our methodology consultation²⁰⁰, we explained why an accurate understanding of the cost of asset use is vital to setting charges under the RCV approach.

In the Strategic Review of Charges 2002-06 we used a 'cash balancing' method to establish a revenue cap. Since the depreciation charge is not a cash item, it had no overall effect on the final revenue cap. As we move towards the RCV approach to charge setting, the level of depreciation will influence the calculation of the required level of revenue.

Depreciation influences Scottish Water's revenue requirement in two main ways:

- It is deducted from the RCV as it represents the amount by which the value of the assets has fallen.
 Assuming a constant rate of return, a reduction in the RCV reduces Scottish Water's revenue requirement.
- The depreciation charge is one component of the revenue requirement. It is added to the cash return on the RCV, PPP and operating costs to determine the revenue requirement.

Calculating the depreciation charge

Establishing the appropriate depreciation charge for an asset involves three critical elements:

- estimating the asset's useful life;
- · the choice of depreciation method; and
- valuing the asset.

Estimating the asset's useful life.

This is the expected number of years that an asset will last. The estimated useful life of an asset in the water

industry can range from a few years to several decades.

Determining the estimated useful life of an asset is not an exact science and is often based on an engineering judgement. Most organisations are able to draw on benchmarks from within their own industries and this provides a degree of consistency.

The choice of depreciation method

There are a number of different depreciation methods²⁰¹. The two most commonly used are 'straight-line' and 'reducing balance'. The straight-line depreciation method spreads the cost of using the asset evenly throughout its life. The reducing balance depreciation method assumes that the cost of use is higher in the initial years of the asset's life.

In many industries, the choice of depreciation profile is important. The water and waste water industry has very many assets, and new assets are being built each year. The range of asset types and ages will tend to smooth out the impact of the choice of depreciation method. This is known as the portfolio effect. Let us assume, for example, that a service provider has 30 treatment works, each of which is valued at £100 million and is expected to have a useful life of 30 years. If one works is built each year, the annual depreciation charge will be the same whether the company chooses to use the straight-line depreciation method or the reducing balance depreciation method.

As Scottish Water has nearly 400 water treatment works and around 1,900 waste water treatment works, the portfolio effect should minimise the risk that the method of depreciation that is chosen for an individual asset might have a significant impact on the total depreciation charge for Scottish Water.

Valuing the asset

There are two principal ways to value a fixed asset – based on its current or historic (purchase) cost. Current cost revalues the asset each year such that its gross (undepreciated) value should be broadly equivalent to

the current price of replacing the asset. The historic cost simply considers the acquisition cost of the asset to be its value throughout its life. The method chosen has a significant impact when assessing depreciation.

Current cost accounting principally involves establishing the current value of the asset to the business. This can be obtained in one of three ways:

Modern Equivalent Asset (MEA) valuation

Ofwat defines the gross MEA value as representing the cost to replace an old asset with the same service capability, allowing for any difference both in the quality of the output and in operating costs. Net MEA value is the gross value net of accumulated depreciation²⁰².

MEA valuation is most suited for industries that use long-lived assets where the technology behind these assets is steadily evolving. In such industries, using the acquisition cost of the asset could inflate its value as, through time, technology advancements will provide lower cost and higher quality solutions.

Net realisable value (NRV)

If the proceeds obtained through disposing of the asset are higher than the MEA value, the NRV should be used to value the asset. The water industry is, however, required to provide a service even where the customers served are very high cost. The industry does not have the discretion to dispose of many of its assets. An NRV approach to valuation would therefore be misleading.

Indexation

Indexation could be used to revalue the asset to its current value. Under an indexation approach, a price index is used to inflate the historic purchase cost to a current value. This approach differs from MEA valuation as it is linked to the historic cost of the asset.

There are difficulties in determining an appropriate price index and this approach takes no account of

²⁰¹ See Volume 3, Chapter 3 of our methodology consultation 'Our work in regulating the Scottish water industry: The calculation of prices', for a description of depreciation methods.

²⁰² Ofwat, RAG 1.03, January 2003.

changes in technology. It would be likely to overstate the appropriate level of depreciation.

Ofwat's approach to determining a depreciation charge

Ofwat calculates depreciation on a current cost basis. It separately considers investment:

- in assets that deliver base levels of service; and
- in assets that enhance levels of service.

It calculates depreciation separately on each type of investment, namely:

- · depreciation on existing assets; and
- depreciation on new capital expenditure.

Ofwat uses the reported depreciation charge from the business plans of the companies in England and Wales but conducts a check on its reasonableness before it is included in the final price determination. Ofwat takes the following factors into account:

- Asset valuation. Depreciation is calculated using MEA valuations of assets. This ensures that assets are valued in terms of their replacement value, rather than their actual realisable value if sold.
- Assets' useful lives. The assets in the water industry have wide-ranging useful lives. In order to ensure consistency between companies in the price setting process, assets are classified into five categories. Each category is assigned a 'standard life' which is used in the depreciation calculation:
 - very short (assets having a life of up to five years are assigned a standard life of five years);
 - short (assets having a life of six to 15 years are assigned a standard life of 10 years);
 - medium (assets having a life of 16 to 30 years are assigned a standard life of 20 years);

- medium/long (assets having a life of 31 to 50 years are assigned a standard life of 40 years);
 and
- long (assets having a life exceeding 50 years are assigned a standard life of 60 years).
- Asset apportionment. Ofwat apportions new capital expenditure between the above asset categories according to a series of set proportions. Different apportionments are used depending on whether the capital expenditure is an enhancement or a renewal and whether it is for a water or waste water asset. The apportionments are used to reduce the effects on the price setting process of the companies' different accounting policies.
- Depreciation method. Ofwat calculates depreciation on a straight-line basis. We understand that all water companies in England and Wales are also currently using straight-line depreciation.
- Overall check on total depreciation 'broad equivalence'. For each company, Ofwat combines reported depreciation on existing assets with depreciation on new capital expenditure to provide a figure for total depreciation. It applies a check on this total figure to ensure that it is reasonable. This check is called 'broad equivalence'. Where calculated depreciation fails this check, Ofwat will adjust the level of depreciation to ensure that prices are set at an appropriate level.

The rationale behind broad equivalence is relatively simple²⁰³. The level of depreciation should depend on the level of investment. Depreciation should only increase if there is net new investment.

The practical effect of broad equivalence is to use projected capital maintenance expenditure as a 'cap' on the level of future depreciation. This ensures that customers do not face bills that are higher than is necessary.

²⁰³ Ofwat first set out its rationale in its consultation for the 1999 price review, 'Setting price limits for water and sewerage services. The framework and business planning process for the 1999 Periodic Review' (February 1998).

Alternative ways to calculate depreciation

We have reviewed other potential approaches for calculating depreciation. In a consultation paper which it published in March 2002²⁰⁴, Ofwat outlined the following alternative approaches to depreciation:

- · the renewals accounting approach;
- the economic depreciation approach; and
- an approach which bases the depreciation charge on the RCV.

We examined these approaches in our methodology consultation²⁰⁵. We believe that the use of the Modern Equivalent Asset Value (MEAV) is the most appropriate given the circumstances of the water industry.

Calculating Scottish Water's depreciation charge

In our methodology consultation²⁰⁶, we noted our intention to use an approach to calculate depreciation which is:

- consistent with Ofwat's approach in England and Wales:
- appropriate for long life assets; and
- consistent with Accounting Standard FRS15.

In this draft determination, therefore, our approach to calculating depreciation:

- uses Ofwat's five-step classification of asset life, ranging from very short to long;
- establishes the economic value of the asset on the basis of an MEA valuation; and
- assumes straight-line depreciation over the life of the asset.

In order to calculate depreciation, we have considered Scottish Water's assets in two parts, namely:

- the assets expected to be in existence on 1 April 2006; and
- additions to the asset base after 1 April 2006 (the first day of the new regulatory control period).

Depreciation charge for existing assets

To calculate the depreciation on Scottish Water's existing assets we needed to establish:

- the starting value of the assets; and
- the remaining useful lives of the assets.

Scottish Water has not yet had to report a current cost depreciation charge on a basis that is consistent with the companies south of the border.

Starting values

We have used the expected MEA value of Scottish Water's assets on 1 April 2006. Scottish Water reports information on the value of its assets to us as part of its business plan submission. We used actual asset values at the end of the financial year 2003-04 and accepted Scottish Water's projections of asset additions for the remainder of the 2002-06 regulatory control period.

We have used the net asset value in our calculation. By using net rather than gross asset values, we are essentially assessing the cost to replace Scottish Water's assets in their current condition. We take into account the remaining useful lives of these assets²⁰⁷.

In its second draft business plan, Scottish Water valued its assets on an Equivalent Asset Replacement Cost (EARC) basis. We have used these valuations in this draft determination. Scottish Water plans to respond to this draft determination with MEA asset values. We understand from Scottish Water that the methods for calculating EARC and MEA values are similar²⁰⁸. We

 $^{^{204}}$ Ofwat, 'The approach to depreciation for the periodic review 2004 - a consultation paper', (March 2002).

²⁰⁵ See Volume 3.

²⁰⁶ Volume 3 of our methodology document, 'Our work in regulating Scottish Water: The calculation of prices', Chapter 10.

²⁰⁷ Net asset value = gross asset value * (remaining asset life/asset life if new).

²⁰⁸ Letter from Scottish Water dated 23 July 2004.

expect that Scottish Water's MEA valuation should not be significantly different from the reported EARC value.

Scottish Water reported a net EARC value of £2,488 million for all non-infrastructure assets. £2,274 million of this net EARC has to be depreciated. This total asset value has been apportioned across the same asset life categories as used by Ofwat. The value of the assets in each category is shown in Table 16.1.

Table 16.1: Reported EARC valuation of assets expected to be in existence for year end 2005-06

	Year end 2005-06 Net EARC
Very short	£34.1m
Short	£272.6m
Medium	£560.5m
Medium/long	£152.8m
Long	£1,254.0m
Land/non-depreciated assets	£214.0m
Total	£2,487.9m
Total excluding land and non-depreciated assets	£2,274.0m

Remaining useful lives

We have assumed that Scottish Water's existing assets on 1 April 2006 will be half-way through their useful lives. Our analysis of reported EARC values suggests that this is a fair assumption to make. The net EARC is 53% of the gross EARC. This is illustrated in Table 16.2.

Table 16.2: Net EARC valuations as a percentage of gross EARC valuations for year end 2005-06

	Year end 2005-06 gross EARC	Year end 2005-06 net EARC	Net EARC as percentage of EARC
Very short	£50.6 m	£34.1 m	67.4%
Short	£655.2 m	£272.6 m	41.6%
Medium	£1,129.4 m	£560.5 m	49.6%
Medium/long	£234.6 m	£152.8 m	65.1%
Long	£2,218.5 m	£1,254.0 m	56.5%
Land	£214.0 m	£214.0 m	100.0%
Total	£4,502.3m	£2,488m	55.3%
Total (excluding land)	£4,288.3m	£2,274.0m	53.0%

We have applied the standard lives that Ofwat use for asset additions to each category of asset. We have halved Ofwat's standard lives to reflect the expected remaining lives of the assets in the net EARC. This is set out in Table 16.3.

Table 16.3: Standard lives applied to existing assets

	Ofwat standard life for asset additions (years)	WICS standard life for existing assets (years)
Very short	5	2.5
Short	10	5
Medium	20	10
Medium/long	40	20
Long	60	30
Land/non-depreciated assets	Infinite	Infinite

Profile of depreciation for existing assets

We have calculated depreciation on the net EARC on a straight-line basis. This creates the profile for depreciation detailed in Table 16.4.

Table 16.4: Profile of depreciation of base assets 2006-07 to 2009-10 (outturn prices)

Annual depreciation (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very short	£14.0m	£14.5m	£7.4m	£0.0m
Short	£56.2m	£57.8m	£59.6m	£61.4m
Medium	£57.7m	£59.5m	£61.2m	£63.1m
Medium/long	£7.9m	£8.1m	£8.3m	£8.6m
Long	£43.1m	£44.3m	£45.7m	£47.0m
Total	£178.8m	£184.2m	£182.3m	£180.1m

Depreciation charge for asset additions (post 1 April 2006)

Scottish Water is tasked with delivering a very large investment programme in the 2006-10 regulatory control period. We need to estimate the appropriate level of depreciation on these new assets.

In Chapters 13 and 14 we set the maximum likely allowed level of capital expenditure for this regulatory control period. This investment is sufficient to allow the delivery of the Ministers' essential and desirable outputs. We allocate this investment to asset lives in Table 16.5.

We have used the investment allocation between infrastructure and non-infrastructure in Scottish Water's business plan.

Table 16.5 Profile of capital investment 2006-07 to 2009-10 (outturn prices)

Capital investment (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very short	£25.5m	£3.8m	£35.5m	£39.0m
Short	£50.9m	£61.8m	£66.9m	£73.6m
Medium	£63.9m	£70.8m	£75.9m	£83.4m
Medium/long	£42.4m	£42.7m	£44.9m	£49.3m
Long	£130.9m	£128.5m	£136.1m	£149.6m
Infinite	£14.6m	£14.6m	£15.4m	£16.9m
Total	£328.2m	£352.0m	£374.8m	£411.9m

We have assumed that assets are added half-way through the financial year and are depreciated over their full useful life. For instance, if a very short life asset worth £100 million is added in year 1, then in year 1 the depreciation charge on that asset would be £10 million. In years 2, 3, 4 and 5, the depreciation charge would be £20 million. In year 6, the depreciation charge would be a further £10 million. In this way, the full asset value is accounted for over its useful life.

The profile of investment detailed above results in the depreciation profile shown in Table 16.6.

Table 16.6 Profile of depreciation for asset additions 2006-07 to 2009-10 (outturn prices)

Annual Depreciation (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very short	£2.5m	£8.6m	£15.9m	£24.0m
Short	£2.5m	£8.3m	£15.1m	£22.7m
Medium	£1.6m	£5.1m	£8.9m	£13.2m
Medium/long	£0.5m	£1.6m	£2.8m	£4.1m
Long	£1.1m	£3.3m	£5.7m	£8.2m
Total	£8.3m	£27.0m	£48.4m	£72.2m

Total depreciation charge

We have added the ongoing depreciation charge on existing assets to the depreciation charge on new assets that are expected to be added during this regulatory control period. This is set out in Table 16.7.

Table 16.7 Total depreciation charge 2006-10 (outturn prices)

Annual depreciation (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very short	£16.6m	£23.1m	£23.4m	£24.0m
Short	£58.7m	£66.2m	£74.7m	£84.0m
Medium	£59.3 m	£64.5m	£70.2m	£76.3m
Medium/long	£8.4m	£9.7m	£11.1m	£12.7m
Long	£44.1m	£47.7m	£51.3m	£55.3m
Total	£187.2m	£211.2m	£230.7m	£252.3m

Scottish Water's depreciation charge in context – comparisons with England and Wales

We have compared Scottish Water's depreciation charge with that of the water and waste water companies in England and Wales. This allows us to establish the reasonableness of the depreciation charge that we have allowed Scottish Water.

We would ideally have compared relative asset valuations, but these are not collected in a consistent manner on either side of the border. We have, therefore, compared the ratio of the reported current cost depreciation (CCD) of every water and waste water company in England and Wales to a number a different variables that could affect the CCD charge.

Our analysis involves the following steps:

- 1. Establish the factors that may influence the CCD charge.
- Calculate the maximum, minimum, industry average and median values of the ratios between CCD and these factors.
- 3. Assess the extent of any relationship between the factor and the CCD charge.
- 4. Adjust for effects of PPP if appropriate. PPP contracts do not have an equivalent in England and Wales and form a separate element of Scottish Water's revenue requirement. Where appropriate we have adjusted for PPP.

 Establish a range which, based on observed ratios, we would expect Scottish Water's depreciation charge to fall within for both 2002-03 and 2003-04.

We examined the relationship between the CCD charge and a number of factors, as shown in Table 16.8.

Table 16.8: Relationship between CCD and relevant factors

Water	Ratio of CCD to billed properties
vvatei	Ratio of CCD to connected properties
Waste water	Ratio of CCD to billed properties
waste water	Ratio of CCD to population equivalent

We detail our analysis below.

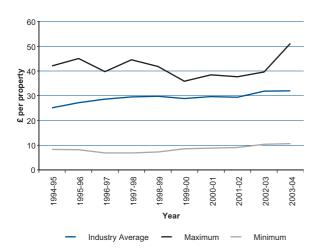
Water: billed properties

In general we would expect the water CCD to rise as the number of properties rises. This is because we would expect more assets to be employed or existing assets to be used more intensively. The ratio we have used for this comparison is:

Annual water CCD/Annual billed properties

The result is a CCD charge per billed property. The following diagram shows the change in the maximum, minimum and industry average for £CCD per billed property for England and Wales from 1994-95 to 2003-04.

Figure 16.1: Comparison of water CCD charge per billed property (England and Wales), 2003-04 prices

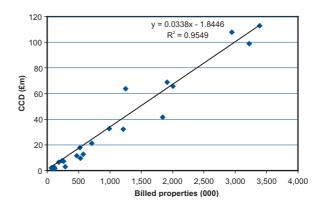


This comparison reveals that the minimum value remains fairly constant throughout the period, while the maximum declines towards the middle of the period before rising towards the end. The industry average generally rises throughout the period.

These observed trends are consistent with increasing standards for water quality, which have required greater use of assets, and therefore a higher CCD charge.

Figure 16.2 shows the relationship between the CCD charge and the number of billed properties in 2003-04.

Figure 16.2: Water CCD to number of billed properties for England and Wales (2003-04)



It is clear that there is a strong relationship between the level of current cost depreciation and the number of customers billed in England and Wales.

Scottish Water had 2.34 million billed properties in 2002-03. By applying this figure to the observed ratios from the England and Wales analysis, we have derived the CCD ranges detailed in Table 16.9.

Table 16.9: Implied range for Scottish Water's water CCD charge 2002-03 (billed properties)

	England and Wales CCD/number of billed properties 2002-03	Implied water CCD 2002-03 for Scottish Water
Industry average	£31.8	£74.5m
Maximum	£39.6	£92.8m
Minimum	£10.3	£24.1m
Median	£31.7	£74.2m

Our analysis suggests that, using 2002-03 variables, Scottish Water's CCD charge for water should be approximately £75 million (in 2003-04 prices). Scottish Water had 2.36 million billed properties in 2003-04. By applying this figure to the observed ratios from the England and Wales analysis, we have derived the CCD ranges detailed in Table 16.10.

Table 16.10: Implied range for Scottish Water's water service CCD charge 2003-04 (billed properties)

	England and Wales CCD/number of billed properties 2003-04	Implied water CCD for Scottish Water 2003-04
Industry average	£32.0	£75.5m
Maximum	£51.2	£120.8m
Minimum	£10.6	£24.9m
Median	£30.5	£72.0m

Our analysis suggests that, using 2003-04 variables, the CCD charge for water should again be approximately £75 million (in 2003-04 prices).

Water: connected properties

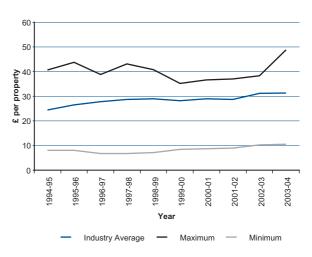
We would expect water CCD broadly to increase as the number of properties rises. In our comparisons, we have used the ratio of:

Annual water current cost depreciation/Annual connected properties

The result is a CCD charge per connected property.

Figure 16.3 shows the change in the maximum, minimum and industry average for CCD per connected property for England and Wales from 1994-95 to 2003-04.

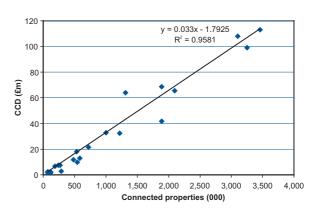
Figure 16.3: Comparison of water CCD charge per connected property (England and Wales), 2003-04 prices



The picture here is broadly similar to the earlier relationship with billed properties.

The relationship between CCD and the number of connected properties is shown in Figure 16.4.

Figure 16.4: Water CCD to number of connected properties for England and Wales (2003-04)



Not surprisingly, there is again a strong relationship between the level of current cost depreciation and the number of customers connected in England and Wales.

Scottish Water had 2.39 million connected properties in 2002-03. Our analysis would suggest the CCD range that is shown in Table 16.11.

Table 16.11: Implied range for Scottish Water's water CCD charge 2002-03 (connected properties)

	England and Wales CCD/number of connected properties 2002-03	Implied water CCD for Scottish Water 2002-03
Industry average	£31.1	£74.4m
Maximum	£38.3	£91.5m
Minimum	£10.3	£24.6m
Median	£31.4	£74.9m

Analysis of 2002-03 connected properties would suggest that Scottish Water's CCD charge for water should again be approximately £75 million (in 2003-04 prices).

Scottish Water had 2.48 million connected properties in 2003-04. Our analysis would suggest the range for Scottish Water's water CCD charge as outlined in Table 16.12.

Table 16.12: Implied range for Scottish Water's water CCD charge 2003-04 (connected properties)

	England and Wales CCD/number of connected properties 2003-04	Implied water CCD for Scottish Water 2003-04
Industry average	£31.3	£77.6m
Maximum	£48.8	£121.2m
Minimum	£10.5	£26.1m
Median	£30.2	£75.0m

Analysis for the 2003-04 number of connected properties would suggest a modestly higher CCD charge for water. In this case, around £77 million may be appropriate.

Waste water: CCD per property billed

We would expect the waste water CCD charge to rise as the number of properties billed rises. In our analysis, we used the ratio of:

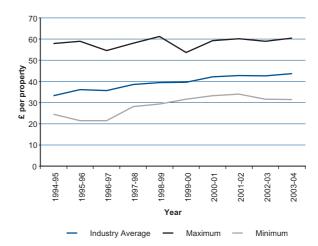
Annual waste water CCD/Annual billed properties

The result is a CCD charge per billed property.

Figure 16.5 shows the change in the maximum, minimum and industry average for the CCD charge per

billed property for England and Wales from 1994-95 to 2003-04.

Figure 16.5: Comparison of waste water CCD charge per billed property (England and Wales), 2003-03 prices

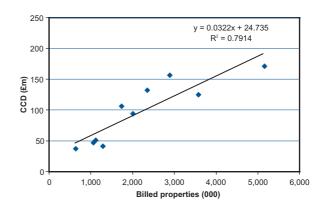


The pattern in waste water is similar to that which we saw on the clean water side. The average generally rises throughout the period.

This would seem to be consistent with the increasing standards for waste water treatment in England and Wales. Achieving higher standards has required significant investment and consequently increased CCD.

Figure 16.6 shows the relationship between the CCD charge and the number of billed properties in 2003-04.

Figure 16.6: Waste water CCD to number of billed properties in England and Wales (2003-04)



The relationship is less strong than that which we saw for water. However, there is still a clear correlation.

Scottish Water had 2.23 million billed waste water properties in 2002-03. The proportion of customers not served by a PPP-operated works is 51% or around 1.14 million customers. Our analysis would suggest the CCD range detailed in Table 16.13.

Table 16.13: Implied range for Scottish Water's waste water CCD charge 2002-03 (billed properties)

	England and Wales CCD/number of billed properties 2002-03	Implied waste water CCD for Scottish Water 2002-03
Industry average	£42.6	£48.6m
Maximum	£58.9	£67.2m
Minimum	£31.7	£36.1m
Median	£46.4	£52.9m

Our analysis for 2002-03 billed properties would suggest that Scottish Water's CCD for waste water (net of PPP) should be approximately £53 million (in 2003-04 prices).

In 2003-04 we believe that Scottish Water had around 1.13 million customers not served by PPP sites. This would suggest the CCD ranges detailed in Table 16.14.

Table 16.14: Implied range for Scottish Water's waste water CCD charge 2003-04 (billed properties)

	England and Wales CCD/number of billed properties 2003-04	Implied waste water CCD for Scottish Water 2003-04
Industry average	£43.7	£48.3m
Maximum	£60.6	£66.8m
Minimum	£31.4	£35.9m
Median	£45.8	£52.6m

This analysis would suggest that Scottish Water's CCD for waste water should be approximately £53 million.

Waste water: CCD per population equivalent

We would expect waste water CCD to rise as the number of equivalent customers rises. Our use of a population equivalent allows us to measure the extent of treatment delivered by a company. This helps us to ensure that we are comparing like-for-like with England and Wales.

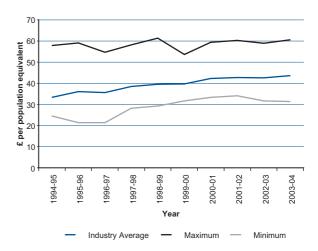
In our analysis, we use the ratio of:

Annual waste water CCD/Annual domestic equivalent properties

The result is a CCD charge per domestic equivalent customer.

Figure 16.7 shows the change in the maximum, minimum and industry average for the CCD charge per domestic equivalent customer for England and Wales from 1994-95 to 2003-04.

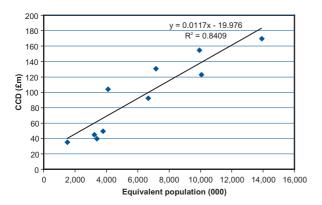
Figure 16.7: Comparison of waste water CCD charge per population equivalent (England and Wales), 2003-04 prices



This comparison reveals that the minimum value rises throughout the period while the maximum remains reasonably constant. The industry average rises steadily during the period.

Figure 16.8 shows the relationship between waste water CDD and the domestic population equivalent in 2003-04.

Figure 16.8: Waste water CCD to domestic population equivalent in England and Wales (2003-04)



This reveals that there is a stronger relationship than there was in the comparison of simple billed properties.

Scottish Water had 6.8 million domestic equivalent customers in 2002-03. This is reduced to approximately 3.5 million customers after we adjust for the impact of PPP. This suggests the CCD range detailed in Table 16.15.

Table 16.15: Implied range for Scottish Water's waste water CCD charge 2002-03 (population equivalent)

	England and Wales CCD/population equivalent	Implied waste water CCD for Scottish Water 2002-03 2002-03
Industry average	£14.6	£51.0m
Maximum	£26.7	£93.4m
Minimum	£11.1	£38.7m
Median	£13.8	£48.4m

Our analysis of the 2002-03 population equivalent would suggest a CCD for waste water of approximately £51 million (in 2003-04 prices).

Scottish Water had 7.18 million domestic equivalent waste water customers in 2003-04. The adjustment for PPP reduces this to 3.61 million. This suggests a CCD range as set out in Table 16.16.

Table 16.16: Implied range for Scottish Water's waste water CCD charge 2003-04 (population equivalent)

	England and Wales CCD/population equivalent	Implied waste water CCD for Scottish Water 2003-04 2003-04
Industry average	£14.8	£53.6m
Maximum	£25.4	£91.8m
Minimum	£11.8	£42.6m
Median	£13.9	£50.3m

Our analysis of Scottish Water's population equivalent in 2003-04 would suggest a CCD for waste water of approximately £54 million (in 2003-04 prices).

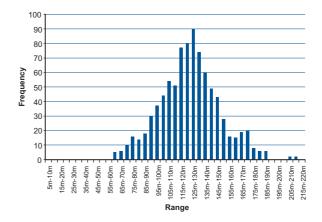
Implications for Scottish Water's depreciation charge

Our analysis would therefore suggest that Scottish Water should have:

- A current cost depreciation charge for water of approximately £75 million. This would be consistent with the average position in England and Wales.
- A current cost depreciation charge for waste water of approximately £54 million. This would be consistent with the average in England and Wales.

We have also analysed the range and frequency of answers for the level of CCD for water and waste water. This is shown in Figure 16.9.

Figure 16.9: Frequency of comparisons between Scotland and England and Wales for CCD for water and waste water.



The overall average is £125 million. Most answers are in the range of £105 million to £140 million. A CCD charge of between £180 million and £185 million would be consistent with the upper-end of this range analysis.

We have conducted a number of comparisons with the companies south of the border, which suggest that the level of depreciation that we have allowed is prudent.

We need to project forward the appropriate level of CCD. This requires us to take account of:

- increases in the allowed maintenance spend in England and Wales from 2005 onwards; and
- inflation.

In its final determinations, Ofwat allowed a 22% increase in capital maintenance. If we assume that this is evenly divided between both infrastructure and non-infrastructure assets, this would increase expected CCD to around £150 million to £160 million.

Furthermore, if we assume an inflation rate of 2.5%, the average CCD would increase to approximately £155 million to £165 million at the start of the period. The maximum reasonable CCD would be approximately £230 million to £240 million (in 2005-06 prices).

This analysis is a useful check on our calculation of Scottish Water's CCD charge. In this draft determination, we have allowed Scottish Water an annual depreciation charge ranging from £182 million to £224 million (in 2005-06 prices). This is at the upper end of the range that Scottish Water should receive that is suggested by comparisons with England and Wales.

Summary

Our move towards the RCV method of price setting will make it increasingly important that we include an appropriate depreciation charge in our price determinations.

In this draft determination we have accepted information from Scottish Water on its net EARC. We have been advised that this should be in line with its net MEAV.

This suggests that Scottish Water's depreciation charge in the 2006-10 regulatory control period is relatively high.

Section 4: Funding capital expenditure Chapter 17: Corporation tax

Introduction

In Volume 3 of our methodology consultation we explained that we did not expect Scottish Water to be liable to pay corporation tax during the regulatory control period 2006-10. The three former water authorities had previously assured us that the industry in Scotland should not be liable for corporation tax until after 2010.

In its response to our methodology consultation and in its first and second draft business plans, Scottish Water indicated that it expects to pay corporation tax from 2006-07. We took expert tax advice from Ernst & Young LLP and in this draft determination we have taken full account of the tax for which Scottish Water could reasonably be liable.

In this chapter we explain:

- how corporation tax is calculated;
- issues specific to the water industry which complicate how corporation tax is calculated;
- representations from Scottish Water concerning corporation tax issues; and
- the assumptions we have made to calculate corporation tax.

In Chapter 4 of Volume 7 we explain the levels of corporation tax that we expect Scottish Water to pay in each year.

Calculation of corporation tax

Corporation tax is paid according to an assessment by HM Revenue and Customs (HMRC) of the profits that a company makes. This may be different from the level of profit that is recognised in a company's accounts. This is because HMRC requires different assumptions to be made in order to calculate the level of profit. These differences can be divided into four broad categories:

 the classification of operating (revenue) expenditure and capital expenditure;

- depreciation;
- amortisation; and
- other non-allowable items.

The starting point for the calculation of corporation tax is company historic cost operating profit, as stated in the company accounts. Operating profit is also known as profit before interest and tax. It can be calculated by subtracting operating costs and depreciation from total revenue.

HMRC then requires a series of adjustments to be made to the company's reported operating profit to calculate the profit on which tax will be payable. This value is then multiplied by the corporation tax rate to calculate a tax charge. The first adjustment relates to the interest that a company pays on its debt.

Interest paid on debt is a tax-deductible expense²⁰⁹.

Classification of revenue and capital expenditure

In company accounts, revenue (operating) expenditure is recognised in the year it is spent while capital expenditure is depreciated over the underlying asset's useful life. Some types of expenditure, such as electricity costs, are clearly revenue (operating) expenditure. Other costs, such as building a new waste water treatment works, are clearly capital expenditure.

In other cases the distinction may be more blurred and the company's accountants must make a judgement about how the expenditure should be classified.

At the current time, HMRC classifies a significant proportion of capital expenditure, particularly that relating to maintenance, as revenue expenditure. Two separate rules apply to this expenditure:

 it can be deducted from operating profit in the same year (this would apply either to very short-term assets or specifically-recognised investment); or

²⁰⁹ We consider the cost of debt in Chapter 18 on the allowed rate of return.

 it can be deducted from operating profits as the asset is depreciated through the accounts – this is known as deferred revenue expenditure.

Depreciation

We explained in the previous chapter that companies recognise a depreciation charge to reflect the use of their assets. In most cases, HMRC does not specifically recognise depreciation in the calculation of profit for tax purposes (with the exception of deferred revenue expenditure – see above). This is because it would allow companies to change their calculated tax liability by changing assumptions about the lives of their assets. Depreciation charges are therefore added back to accounting profit to calculate corporation tax.

HMRC has its own rules for calculating the costs of asset use. There are three principal categories:

- capital allowances,
- · industrial buildings allowances, and
- finance leases.

We explained in Chapter 13 that the water industry uses renewals accounting. This means that certain parts of the network (mostly underground) have a renewals charge rather than a depreciation charge. We explain some of the issues that arise later in this chapter.

Capital allowances

For most capital expenditure, HMRC allows companies to deduct capital allowances from their taxable profit.

Capital allowances are calculated on a reducing balance basis. This recognises that assets wear out more quickly at the start of their lives than at the end of their lives. HMRC allows the same percentage reduction to the starting asset value each year. Table 17.1 provides an example of an asset that is bought for £1,000 and which is assumed to wear out at 20% per year.

Table 17.1: Reducing balance depreciation

	Year 1	Year 2	Year 3	Year 4	Year 5
Opening asset value	1,000	800	640	512	410
Depreciation for year (20% of opening asset value)	200	160	128	102	82
Closing asset value	800	640	512	410	328

HMRC applies three separate rates – 100%, 25% and 6%. HMRC also sets out clear rules on the allocation of capital expenditure to each of these categories (which are known as pools).

Capital allowances are deducted from taxable operating profit.

Industrial buildings allowances

Some types of specialist plant and machinery are not included in capital allowances. These assets are treated slightly differently. HMRC assumes that these assets wear out over 25 years on a straight-line basis. Table 17.2 shows the allowances for such an asset bought for £1.000.

Table 17.2: Straight-line industrial buildings allowance

	Year 1	Year 2	Year 3	Year 4	Year 5
Opening asset value	1,000	960	920	880	840
Depreciation for year	40	40	40	40	40
Closing asset value	960	920	880	840	800

These capital allowances are also deducted from taxable operating profit.

Finance leases

Finance leases are long-term leases where ownership and maintenance of the asset is generally passed to the company using the asset (the lessee).

The cost of finance leases is allowed for the calculation of corporation tax. It is treated as if it were revenue expenditure (see above).

Amortisation

When a grant is received to pay for the purchase of an asset the income is recognised in the accounts as the asset wears out. This is known as amortisation.

HMRC does not recognise amortisation for the calculation of corporation tax. Instead, grants are added to operating profit in the year that they are received. Amortisation is therefore deducted from operating profit to calculate corporation tax.

Other non-allowable items

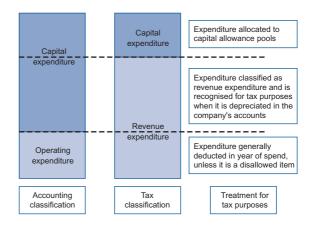
Other non-allowable items include the following:

- general provisions, which are only recognised when the underlying transaction actually occurs;
- purchase of some assets, for example land, which does not qualify for capital allowances;
- some revenue/operating expenditure; and
- some income may not be treated as income for tax purposes.

Overall calculation of profit for tax purposes

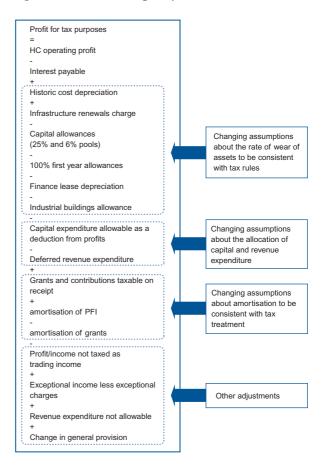
Figure 17.1 compares the treatment of expenditure for accounting and tax purposes. It explains at a high level the factors that are important in our calculation of Scottish Water's potential tax charge.

Figure 17.1: High level explanation of Scottish Water's potential tax charge



We show the calculation of corporation tax that we use in Figure 17.2.

Figure 17.2: Calculating corporation tax



The profit for tax purposes is multiplied by the corporation tax rate (currently 30%) to calculate the tax paid in a year.

A company can also make a tax loss. That is, the calculation of profit for tax purposes is negative. Tax losses can be carried forward to future years and can be used to reduce future tax paid.

Specific issues in the water industry

Two issues that are specific to the water industry complicate the calculation of the tax charge:

- Tax Bulletin 53, and
- the switch to international accounting.

Tax bulletin 53

In 1999, HMRC²¹⁰ issued Tax Bulletin 53. This bulletin further clarified the rules for deducting capitalised revenue expenditure from taxable operating profit. The bulletin made it clear that capitalised revenue expenditure relating to fixed assets should only be deducted when it is recognised in the company accounts. The water industry was given six years' grace, until 1 April 2005, to comply with the new rules.

In 2000, Water UK (the water and sewerage companies' trade association) signed an 'entirety agreement' with HMRC. The agreement does not have a fixed end date and is signed on behalf of all water and sewerage companies.

This agreement means that large portions of the companies' networks are considered as one asset for the purposes of tax calculation. The terms of the agreement mean that replacement of assets (both infrastructure and non-infrastructure assets) is considered as capitalised revenue expenditure. In the absence of this agreement, the replacement of constituent parts would be considered capital expenditure and would be allocated to the capital allowance pools. Tax Bulletin 53 allowed this additional capitalised revenue expenditure to be deducted in the year of spend. This reduced the companies' tax liability in each year.

From 1 April 2005, capitalised revenue expenditure must be recognised for tax purposes when it is recognised in the company accounts. This affects the companies in two ways since infrastructure and non-infrastructure assets are treated differently.

Capitalised revenue expenditure for non-infrastructure assets should now be claimed as a tax-deductible expense when it is depreciated. The entirety agreements may now disadvantage companies (in their expenditure on non-infrastructure assets), since accounting depreciation generally assumes longer asset lives than those underpinning the capital allowances.

Capitalised revenue expenditure for infrastructure assets can be claimed as a tax-deductible expense when it is recognised in the accounts through the infrastructure renewals charge. Since the infrastructure renewals charge is set at the expected level of infrastructure renewals expenditure in the long term, this generally means that infrastructure assets can still be deducted in the year from taxable operating profit.

Tax Bulletin 53 will probably increase the corporation tax paid in the short term for the companies that are covered by the entirety agreement.

Change to International Accounting Standards

The UK plans to adopt International Financial Reporting Standards (IFRS), and some accounting rules will change as a result. This will have a particular impact on the water industry, because IFRS rules do not allow renewals accounting. IFRS will require infrastructure assets to be depreciated in the conventional way, with an assumed asset life.

This will affect the tax charge paid by water and sewerage companies. Capitalised infrastructure renewals expenditure will no longer be able to be deducted in the year of spend. It will be deducted in line with the depreciation of the asset.

The move to International Accounting Standards will increase the tax charge in the short term. However, in the long term tax should return to existing levels once allowable annual depreciation has built up to current levels.

²¹⁰ Then called the Inland Revenue.

Scottish Water's view on tax

Scottish Water has provided us with information about its views on its tax liabilities in:

- the first draft business plan;
- a response to an official information request (WIC57); and
- the second draft business plan.

We found it difficult to replicate the tax calculations that were provided in the first draft business plan. We therefore wrote to Scottish Water (WIC57) to ask for detailed information on its current tax position.

The letter addressed the following issues:

- entirety agreements;
- allocation of capital expenditure to capital allowance pools;
- · treatment of infrastructure renewals;
- treatment of research and development;
- core and non-core functions;
- deferred tax;
- effects of history on the projected tax charge;
- effects of Scottish Water Solutions on the tax charge;
 and
- differences between Scottish Water's circumstances for tax purposes and those of the water and sewerage companies in England and Wales.

Scottish Water's response is available on our website. The key points that Scottish Water raised in its response are summarised below.

Scottish Water explained that because it had inherited the tax position of the three former water authorities, it had significant tax losses which prevented it from being liable for corporation tax when it was first set up. Scottish Water now expects these accumulated losses to have all been used by the end of 2006. The Scottish Executive has also required Scottish Water not to undertake an aggressive tax minimisation strategy. Accordingly, the tax benefits of investment were to be realised over a longer period than a more aggressive company may have chosen to claim.

- Scottish Water does not currently claim capital allowances for work in progress. Capital allowances are claimed when assets are commissioned. Scottish Water expects to start claiming capital allowances on work in progress during this regulatory control period.
- Scottish Water has not signed an entirety agreement with HMRC. This means that the effects of Tax Bulletin 53 will be less marked in Scotland than in England and Wales. Instead, non infrastructure maintenance is allocated to capital allowance pools, as opposed to capitalised revenue expenditure.

In its second draft business plan, Scottish Water again indicated that it expects to pay corporation tax over the 2006-10 period. In the business plan, Scottish Water recognises that the change to International Accounting Standards may increase its annual tax liability.

How we have dealt with corporation tax in the Strategic Review 2006-10

We have revised our financial model in order to estimate Scottish Water's tax liability for the 2006-10 regulatory control period.

In our model, we have decided to fund Scottish Water's estimated tax liability based on information received from Scottish Water:

 Scottish Water has received specific instructions not to pursue an aggressive tax minimisation strategy.
 This may be different from the incentives for a privatised water and sewerage company that is looking to maximise shareholder value; and Scottish Water does not have an entirety agreement with HMRC.

In particular, we have accepted Scottish Water's assumptions on the treatment of assets as either capital expenditure or capitalised revenue expenditure and the allocation of capital assets to capital allowance pools.

We have assumed that there is minimal capitalised revenue non-infrastructure investment because Scottish Water does not have an entirety agreement with HMRC.

We have based our allocation of assets to capital allowance pools on the split of assets used. This is shown in Table 17.3.

Table 17.3: Allocation of assets to capital allowance categories

	Apportionment*
25% pool	43%
6% pool	30%
4% IBA	10%
Capitalised revenue expenditure (deducted on year of spend)	0%
Capitalised revenue expenditure (infrastructure depreciated)	1%
Capitalised revenue expenditure (non- infrastructure depreciated)	14%
Not qualifying	2%
Total	100%

We have set prices in this draft determination that take account of the likely changes in the rules for corporation tax. We have assumed also therefore that the capitalised revenue expenditure for infrastructure assets will not be available in the year of spend.

Instead, we assume that infrastructure renewals are depreciated over 30 years. This means that our price determination funds Scottish Water for the likely effects of moving to International Financial Reporting Standards.

This assumption may overstate Scottish Water's tax charge, particularly in the earlier years of our price determination. If it proves to be the case that we have overestimated Scottish Water's tax charge, we expect the new Commission will reduce future charge caps to reflect any benefit²¹¹.

Conclusion

Scottish Water has not yet had to pay any significant amounts of corporation tax. This reflects accumulated losses inherited from the three predecessor authorities.

Changes to accounting rules are likely to increase the tax paid by the water industry both north and south of the border. We have decided to take a conservative approach in our calculation of the potential tax liability that will be faced by Scottish Water. This reflects a clear concern of customers that prices should be as predictable as possible.

²¹¹ We would handle any such benefit in line with our proposals for dealing with out-performance of the regulatory contract. This is discussed in detail in Volume 7.

Section 4: Funding capital expenditure Chapter 18: The allowed rate of return

Introduction

In the private sector, a regulator sets an allowed rate of return. This is often referred to as the cost of capital. The regulator will set this rate of return to reflect current and expected market conditions. The regulator has a duty to set an appropriate rate of return that allows an efficient company properly to finance its functions. The company is free to choose a mix of debt and equity funding, but its rate of return on its RCV is fixed (unless it outperforms efficiency targets).

In the public sector, the regulator is not able to set the rate of return based on his observation of the cost of capital in the market. Government sets Scottish Water's cost of debt. We have therefore taken account of the Ministerial Guidance on the public expenditure that could be made available to Scottish Water.

As a public sector organisation, Scottish Water has no contributed equity capital, although it generates trading surpluses and reinvests these proceeds. We term this reinvestment 'customer retained earnings'.

We have set an allowed cost of debt and an allowed cost of customer retained earnings; we have also made full allowance for the costs of embedded debt. We have therefore ensured that Scottish Water is not penalised for the cost associated with debt taken out at historically higher interest rates.

This chapter begins by explaining the rate of return; it then reviews how regulators have set the allowed rate of return for companies in the private sector. It concludes by explaining the analysis that we have completed to set an appropriate allowed rate of return for Scottish Water.

The allowed rate of return

What is a rate of return?

A simple example of what the rate of return means would be to consider the interest that is earned on savings in a bank account. Say, for example, that we deposited £200 in a bank at the start of the year and at the end of the year the bank statement says there is

£210 in the account. We can calculate the rate of return as follows:

Rate of return	=	<u>210 – 200</u> 200	*	100%
	=	<u>10</u> 200	*	100%
	=	0.05	*	100%
	=	5%		

In the above example, it is a relatively straightforward exercise to calculate the rate of return in the year since we know the values at the start and at the end of the period. The bank sets a rate of return which it believes will allow it to attract funds. The bank will make use of these funds to generate a profit.

In a similar way, we need to set a rate of return that will allow Scottish Water to cover its costs, invest for the future and remain financially sustainable.

What is an allowed rate of return?

The allowed rate of return is the rate of return that we believe Scottish Water requires in order to meet the objectives that have been set by the Scottish Ministers. Our role is to set maximum charges which are consistent with the delivery of Ministerial Guidance at the lowest reasonable overall cost.

If we set the allowed rate of return at too low a level, there is a risk that Scottish Water would not have sufficient funds to meet its obligations. This could result in debt increasing to unsustainable levels. This would benefit current customers, but would penalise future customers. Alternatively, it could result in a failure to deliver environmental, public health or customer service benefits. Customers would pay lower charges if the rate of return was set too low, but they would also receive a poorer service.

If we set the allowed rate of return at too high a level, customers will pay more than they need to. This could act as a disincentive on management to improve the efficiency of the company. This would mean that customers pay more than is necessary in the medium term. Alternatively, the level of outstanding debt could decline significantly relative to the asset value of the company. This would penalise current customers to the benefit of future customers.

Our objective therefore has to be to ensure that we set an allowed rate of return for Scottish Water so that it can finance its efficient operation.

What is a weighted average cost of capital?

The weighted average cost of capital (WACC) is the overall cost of capital for a firm. It takes account of the capital structure of the firm (ie the market value of its debt and equity) and the rates of return it pays on both its debt and equity.

Retained earnings and share issues are examples of equity. Investors normally hold equity because they expect that they will earn dividends or because they expect that the shares will increase in value.

A private firm can also borrow, by issuing bonds or commercial paper or by seeking a loan from bankers. The firm will have to repay the initial amount of money borrowed at the end of the loan term, and meet interest costs as they become due.

Investors will seek a higher return if they consider that the investment carries a higher level of risk. By risk, we mean the possibility that the investor will not get back some or all of the money invested.

Debt is usually viewed as being less risky than equity. This is because debt normally carries a defined annual rate of interest and in the event of bankruptcy debt holders get paid before shareholders. Equity also pays a less certain amount each year (dividends are at the discretion of the firm). Investors therefore typically require a greater return from providing equity than from providing debt to a firm.

However, as the amount of debt a firm has increases, so does the risk that a firm will not be able to meet its interest payments or repay all of its debt on time. Firms with high levels of debt may have to provide investors with a higher rate of return for new debt than other similar but less indebted firms.

The WACC combines the rate of return from debt and from equity relative to the share of each in the market value of the firm. The formula for assessing the WACC is shown in Figure 18.1²¹².

Figure 18.1: Pre-tax weighted average cost of capital

WACC =
$$r_D^* \underline{D} + r_E^* \underline{E}$$

 $(D + E)$ $(D + E)$

Where:

r = return

D = debt

E = equity

As a worked example, assume that the market value of a firm's debt is £25 million and a firm's equity is £75 million. It pays an annual interest rate of 10% and dividends at 15% of the market value of the equity. The weighted average cost of capital is calculated as follows:

WACC =
$$10\% * \frac{25}{25 + 75} + 15\% * \frac{75}{25 + 75}$$

= $10\% * 25\% + 15\% * 75\%$
= $2.5\% + 11.25\%$
= 13.75%

In order to calculate a weighted average cost of capital, a regulator has to decide an appropriate rate of return for both debt and equity. He also has to assign an appropriate market value to the debt and equity of the firm. Calculation of the rate of return is further complicated by both taxation and inflation.

Taxation

Debt and equity are treated differently for tax purposes. Interest charges are an allowable expense for the

²¹² Assuming no tax advantage to debt or equity.

purpose of corporation tax. Interest charges therefore reduce a company's tax bill. Dividends are paid from the profit that a company makes after paying tax.

The corporation tax advantages of debt are recognised in the post-tax weighted average cost of capital calculation. This is shown in Figure 18.2.

Figure 18.2: Post-tax weighted average cost of capital

```
WACC =  [r_D^* \underline{D}^* (1-t)] + [r_E^* \underline{E}_{\underline{D}}] 
Where:
 r = return 
 D = debt 
 E = equity 
 t = corporation tax rate
```

Inflation

Inflation is the measure of the general rise in the prices of goods and services. Inflation causes the purchasing power of money to be eroded. The investor is therefore concerned with the real rate of return – that is the return after having adjusted for the effect of inflation.

The formula for calculating the real rate is shown in Figure 18.3.

Figure 18.3: Formula for calculating the real rate of return



It is important to differentiate between the real rate of return (when inflation has been taken off) and the nominal rate of return (when it has not).

How regulators set WACC for private sector companies

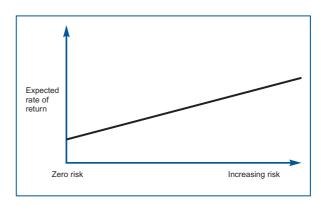
The rates of return for debt and equity

An investor decides where to invest his money by considering the rates of return offered to him for the options open to him, and by taking account of the rate of return relative to his view of the risk.

The ratio of the rate of return to the level of risk should be constant. The lowest rate of return is paid on an investment that has no risk.

Figure 18.4 illustrates that an investor would expect a greater return if the investment were considered to be more risky.

Figure 18.4: Comparison of expected rate of return and risk



Risk-free rate of return

Figure 18.4 shows the 'risk-free' rate of return. Even if there is no risk, an investor would still require a return because of the opportunity cost incurred in having chosen not to spend on goods and services immediately.

UK Government bonds²¹³ are generally considered to have no default risk, since it is believed that the Government will always meet its financial obligations. The return on a bond is set by the interest rate and the principal to be repaid. Over time, inflation will erode the value of this return. There is therefore a residual inflation risk for the investor.

²¹³ Also known as gilt-edged bonds or gilts.

The Treasury also issues index-linked bonds. These bonds pay an annual interest rate of inflation²¹⁴ plus a real rate of return. These bonds have no default or inflation risk.

Regulators can establish the risk-free rate of return by analysing the rate of return on index-linked Treasury bonds. If we take, for example, an index-linked Treasury bond which costs £98 today and matures in one year's time, paying £100 plus £3 in interest and £2.50 in inflation. Inflation is expected to be 2.5%. The real risk-free rate of return would be calculated as follows:

Real rate of return²¹⁵ =
$$\frac{105.5 - [98x1.025]}{98x1.025}$$
 * 100%
= $\frac{105.5 - 100.45}{100.45}$ * 100%
= $\frac{5.05}{100.45}$ x $\frac{100\%}{1}$ = 5.03%

The real risk-free rate of return for the forthcoming year is 5.03%.

The risk-free rate will change according to market conditions.

Estimates of the risk-free rate

The risk-free rate of return is an important input into the calculation of the WACC. Table 18.1 shows a comparison of some recent estimates of the risk-free rate. Each of the studies uses index-linked Treasury bonds as the basis for their estimate. However, each estimate uses a different time horizon to judge the appropriate risk-free rate.

Table 18.1: How other regulators estimate the risk-free rate

Regulator	Year of review	Basis	Time period	Rate
Ofwat	2004	Index-linked Treasury bonds	Medium-term historical average	2.5%-3%
Oxera (for Ofgem)	2004	Index-linked Treasury bonds	Considered both historical averages and future rates	2.25%-2.75%
Civil Aviation Authority	2001	Index-linked Treasury bonds	Medium-term historical average	2.75%-3.25%
Joint regulator study ²¹⁶	2003	Index-linked Treasury bonds	Medium-term historical average	2.5%

²¹⁴ Measured using, for example, the retail price index.

 $^{^{\}rm 215}$ This is the real rate of return since it includes the effects of inflation.

²¹⁶ Wright, Mason and Miles: A study into certain aspects of the cost of capital for regulated utilities in the UK'; February 2003 report on behalf of Smithers & Company Limited, published by Ofgem and commissioned by the UK economic regulators and the Office of Fair Trading.

A regulator also has to make an assessment of the extra risk (beyond the risk-free rate) that an investor in the regulated company must assume. The extra risk and therefore extra return required by an investor will be lower in the case of debt than in the case of equity.

Additional rate of return on debt

The debt of a regulated company has a risk of default. Investors will therefore demand a higher rate of return than the risk-free rate.

If a company's debt is traded on a market then the regulator can observe the additional rate of return that investors demand. The additional rate of return is calculated by subtracting the risk-free rate from the observed return on the company's debt.

Alternatively, regulators can seek to establish an appropriate return by using information from ratings agencies. Firms with traded debt are rated by agencies such as Moody's, Fitch Ratings and Standard and Poor's.

One potential issue in setting an appropriate rate of return on debt is whether or not to include the cost of 'embedded' debt. A company borrows at prevailing market rates. The market rate will fall if inflation falls. A company has to accept the inflation risk when it borrows unless it borrows on an index-linked basis. Such borrowing (termed embedded debt) may appear expensive (or cheap) in the future.

In theory, if a regulator correctly assesses both the long-term risk-free rate and the long-term debt premium, companies should develop a portfolio of debt that is broadly equivalent to the long-term rate of return. At times of low interest rates a company will be able to borrow at below the assessed rate of return on debt; at times of high interest rates a company will be forced to borrow above the assessed rate of return.

It is, however, not certain that the risk-free rate and debt premium can be determined with sufficient confidence or that a company is likely to issue debt sufficiently often to benefit from this portfolio effect.

Estimating the rate of return on equity

The cost of equity cannot easily be observed in the market. Regulators therefore typically use the capital asset pricing model and the dividend growth model to estimate an appropriate cost of equity.

The capital asset pricing model

The capital asset pricing model estimates the return on a particular equity using three variables: the risk-free rate (discussed above), the market risk premium and the beta of the stock. The market risk premium is the expected return on the equity market as a whole minus the risk-free rate. This cannot be calculated with certainty but can be estimated using historical returns. The beta of a stock measures its volatility relative to the volatility of the overall market. A stock with a beta of 1 is no more or less volatile than the market, whereas a stock with a beta of 0.5 will be only half as volatile (ie it will typically move 0.5% if the market moves 1%).

The formula for the capital asset pricing model is shown in Figure 18.5.

Figure 18.5: The capital asset pricing model

 $r = r_f + \beta(r_m - r_f)$

Where:

r = return on the equity of the firm

 r_f = risk-free rate

 β = beta

rm = return on the market

Dividend growth model

The dividend growth model measures the return on a share by forecasting future dividend growth. The model assumes that expectations on future dividends are correctly incorporated into the current share price. The formula for the dividend growth model is shown in Figure 18.6.

Figure 18.6: The dividend growth model

$$r = \frac{DIV_1}{P_0} + g$$

Where:

r = rate of return

 DIV_1 = projected dividend for next year

 P_0 = current market price

g = expected rate of growth in dividends

The present share price can be observed in the market. Expected dividends and the likely growth rate of dividends have to be estimated based on company guidance or analysts' reports.

How regulators have calculated the rate of return on equity

Ofgem, Ofwat and the Civil Aviation Authority (CAA) all use the capital asset pricing model to estimate the return on equity. Ofwat and Ofgem have also used the dividend growth model to confirm their analysis.

Regulators generally comment on the difficulty of estimating the market return. However, regulators have arrived at similar views of the equity risk premium. This is shown in Table 18.2.

Table 18.2: Comparison of calculation of market rate of return

Review	Year of review	Basis	Rate
Ofwat	2004	Forward looking, based on market evidence	4%-4.5%
Oxera (for Ofgem)	2004	Forward looking, based on market evidence	3.5%-4.5%
CAA	2001	Actual market returns on equity	3.5%-4.5%

Ofwat and Ofgem used a beta of 1 in their 2004 final determinations. They believe that recent declines in the beta are the result of increased market volatility and do not reflect a reduction in the risk of water companies or electricity distribution companies. Ofwat has suggested that it is prudent to use a beta of 1 in volatile markets.

The mix of debt and equity

As discussed above, regulators have to determine an appropriate capital structure in order to set an allowed weighted average cost of capital.

There is no consensus on the optimum mix of debt and equity. Regulators can set the allowed rate of return with reference either to:

- projected proportions of debt and equity in the market value of the company; or
- an assessed efficient level of debt and equity.

There are two ways that a regulator can measure the level of debt and equity in a company:

- by using the market value of debt and equity; and
- by using the RCV as a proxy for the market value of the company – the level of debt is the debt issued by the company; the difference between the RCV and the level of debt is therefore the level of equity.

Ofwat has used the RCV as a proxy for the market value of the regulated entity. This approach avoids the difficulty of assessing the market value of the regulated firm's equity. This is difficult because the regulated firm will usually be a subsidiary of a holding company. It will be the shares of the holding company that are traded on the Stock Exchange.

If weights are set using the projected proportions of debt and equity in the market value of the company, then the allowed rate of return will probably better match the demands for interest payments and dividends that a company faces. However, companies are likely to have chosen different mixes of debt and equity. It would not be appropriate for a regulator to set a different allowed rate of return for each company. Moreover, it is important that the onus is placed on the company to maintain the balance between debt and equity that allows it to access the capital markets on a sustainable basis.

If weights are set on the basis of an assessed efficient capital structure then this creates the incentive for the

company to manage the costs associated with debt and equity efficiently.

In 2004, Ofwat and Ofgem estimated WACC based on their view of an efficient capital structure. Their view on the efficient capital structure was based on discussions with experts, market observations, academic evidence and advice from the ratings agencies.

Summary of approaches to setting WACC by regulators of private sector companies

Regulators generally follow a broadly similar procedure in setting the allowed rate of return. This is summarised in Figure 18.7.

Figure 18.7: Setting an allowed rate of return

- 1) Assess the appropriate risk-free rate using long-term return on index-linked Treasury bonds.
- 2) Assess the appropriate debt premium. If the company's debt is not traded, find an appropriate comparator.
- 3) The sum of 1) and 2) gives the return on debt.
- 4) Calculate the market risk premium using long-term returns.
- 5) Calculate the company's beta. If the company is not traded then use the beta of a comparator.
- 6) Using information from 1), 4) and 5), calculate the return on equity using the capital asset pricing model.
- 7) Calculate the proportion of the company's RCV that is debt, use this to weight the information from 2) and 6) to calculate the company's weighted average cost of capital this is the allowed rate of return.

The formula for calculating the allowed rate of return is shown in Figure 18.8.

Figure 18.8: Calculation of the allowed rate of return

$$WACC = \frac{D}{RCV} * (r_f + r_i) + [1 - \frac{D}{RCV}] * [r_f + \beta(r_m - r_f)]$$

Where:

D = level of debt

RCV = regulatory capital value

r_f = risk-free rate

r_i = interest rate premium

 β = beta

 r_m = return on the market

Setting an allowed rate of return for Scottish Water

We have described the process that is used by the regulators of the private sector utilities to set an allowed rate of return. We now outline how we have set an appropriate rate of return for Scottish Water. Our aim has been to allow Scottish Water to earn a return that is sufficient for it to fund its activities in a sustainable way. We have sought a balance between current and future customers by ensuring that the allowed rate of return is only just high enough to cover the costs of the benefits provided to current customers.

Financing of Scottish Water

As a public corporation, Scottish Water has only two sources of funds: revenue from customers and new debt. Scottish Water does not borrow directly from the capital markets, nor does it borrow at commercial rates. Scottish Water borrows from the Scottish Consolidated Fund at public-sector borrowing rates.

Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings have essentially the

same properties as retained earnings (a form of equity) in the private sector, except that they are reinvested for the benefit of customers, rather than with the specific aim of generating increased future profits.

We considered four possible approaches to setting an appropriate rate of return for Scottish Water:

- adopt the Ofwat allowed cost of capital;
- use long-term average real borrowing rates;
- use the discount rate suggested in HM Treasury's Green Book; and
- use a hybrid approach.

We examine each in turn and summarise the advantages and disadvantages of each approach.

Ofwat's assessment of the allowed cost of capital

We considered whether it would be appropriate to use Ofwat's allowed rate of return. This could potentially have been justified on the grounds that the companies in England and Wales are good comparators for Scottish Water.

Scottish Water and Water UK have argued in their response to our methodology consultation that it would be appropriate to allow Scottish Water the same rate of return as Ofwat allowed to the companies south of the border. They argued that this would more fairly reflect the opportunity cost of the capital used by Scottish Water. Water UK suggested that Scottish Water could return any excess funds to customers. We have not accepted this argument for four reasons.

 It is not for this Office to question the price at which the Government has chosen to make capital available to Scottish Water. This would not be consistent with the requirement on us to determine the maximum level of charges consistent with Scottish Water delivering Ministers' objectives at the lowest reasonable overall cost.

- This approach would not be consistent with the tight budgetary constraint and continuing challenge to improve efficiency that underpins this determination.
- The opportunity cost of capital will vary significantly between investors, and while the Ofwat allowed rate of return may represent the opportunity cost to the marginal next investor in the private sector water industry south of the border, there is no reason to believe that the opportunity cost of Scottish Executive funding is the same.
- The retained earnings within Scottish Water belong to the customers of Scottish Water. The available evidence suggests that customers want certainty in pricing and this would be inconsistent with an opportunity cost approach where the size of a 'dividend' would only be known at the end of a financial year.

Moreover, the allowed rate of return south of the border has to be sufficient to attract debt and/or equity investment. The water and sewerage companies have to compete for capital with many other investment choices that are available to providers of capital. Ofwat has a duty to ensure that an efficient company is able to access the capital markets and attract sufficient capital to finance its functions.

In contrast, Scottish Water does not have to compete for capital in the same way. It would therefore not be realistic to set an allowed rate of return at or close to the same level as in England and Wales.

Scottish Water's risk profile could also reasonably be considered to be lower than that of the companies south of the border. This is because competition is more extensive in England and Wales, where inset appointments, special deals outside the tariff baskets (which are at the risk of the shareholder) and common carriage are possible. The companies have also improved their operating cost efficiency, thereby reducing the opportunity for significant outperformance of the regulatory settlement.

Long-term average borrowing rates

Scottish Water currently relies on debt provided by Government and retained earnings to finance an increase in its asset base. A second possible approach that we considered in our methodology consultation was to set an allowed rate of return that was consistent with an average of observed historic real borrowing costs.

We discounted this approach for two reasons. There is a wide range of maturities and coupons, which would have complicated our assessment of an appropriate rate of return.

We were also concerned that this approach could overestimate the required rate of return in the medium term, as the premium on longer-term debt is at historic lows. We considered that it would be better to allow for the costs of embedded debt and make an estimate of the current real cost of debt.

This approach would still have required us to set an allowed rate of return for the non-leveraged portion of the RCV. This is likely to become an increasingly important element of the funding of Scottish Water. For the reasons that we set out below, we would have sought to reduce the assessed cost of debt to ensure that there was no advantage to funding investment through debt or customer retained earnings.

The Treasury Green Book²¹⁷

We considered using a cost of capital from 'The Green Book'. Published by HM Treasury, this is a guide to appraisal and evaluation in the public sector. 'Appraisal' relates to the decision to commit funds to the achievement of objectives and 'evaluation' relates to the assessment of past and present activities. The preface to the 2003 edition of The Green Book states that the guidance "is relevant to all appraisals and evaluations":

"Some central government bodies sell goods or services commercially, including to the government itself. These activities may be controlled by requiring prices to be set to provide a required rate of return (RRR) on the capital employed by the activity as a whole. Government policy is generally to set charges for goods and services sold commercially at market prices, and normally to recover full costs for monopoly services, (including the cost of capital as defined in the Treasury Fees and Charges Guide)."

The 2003 edition of The Green Book reduced the Treasury estimate of the discount rate to 3.5% real.

The 'discount rate' measures 'the rate of social time preference'. The Green Book defines social time preference as "the value society attaches to present, as opposed to future, consumption".

We considered setting the allowed rate of return for Scottish Water in line with The Green Book discount rate of 3.5% real. We saw one major advantage of this approach, in that it uses a rate of return that is established by Government and is sufficient for Scottish Water to fund its efficient operation.

However, setting an allowed rate of return at 3.5% real would be significantly higher than the observed cost of new debt to Scottish Water. This could have the effect of encouraging Scottish Water to increase its borrowing and may have delayed the necessary improvements in efficiency. The effect of this could have been reduced if we regarded the 3.5% real rate as the pre-tax return rather than the post-tax return. We have decided not to use this approach because we felt that this rate of return was higher than Scottish Water currently needs. As such, it would have been inconsistent with our establishing the lowest reasonable overall cost of delivering the objectives of Ministers¹.

Hybrid approach

We have decided to apply a modified version of the WACC approach that is used by the regulators of private sector companies. We have combined an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return²¹⁸.

²¹⁷ 'The Green Book' Appraisal and Evaluation in Central Government, HMSO, 2003.

²¹⁸ This equity (unleveraged) portion of the RCV is equivalent to the Glas Cymru financial buffer.

The future real rate of interest on debt for Scottish Water was estimated by looking at an average of current borrowing rates faced by Scottish Water.

We have made an allowance for the full cost of embedded debt.

We have collected information on the real rates offered by government gilts. Similarly, we have analysed the premium of Public Works Loans Board rates to government gilts. The real rate on long dated gilts has averaged 1.8% during 2004-05. Expected RPI inflation is 2.5%. The premium on public lending is approximately 0.3% to the real return on gilts. This gives an allowed rate of return for Scottish Water's debt of 4.6%. We have linked prices and the cost of capital to RPI (rather than the CPI measure we are using for operating cost inflation) in order to ensure that Scottish Water is not exposed to funding risks associated with changes in the RPI.

We have set the pre-tax allowed rate of return on the customer retained earnings at the post-tax allowed rate of return for debt. We believe that it is appropriate for customers to finance a relatively low return on the customer retained earnings. There is consequently no incentive for Scottish Water to seek to change its current ratio of debt to its regulatory capital value. If the return on the customer retained earnings had been greater than the return on debt, Scottish Water would have had an incentive to repay debt. In contrast, if the return on the customer retained earnings had been lower than the return on debt, Scottish Water would have had an incentive to take on more debt.

This approach should help stakeholders to monitor Scottish Water's performance. The level of its outstanding debt relative to its RCV should be in line with the forecasts that are included in the Strategic Review of Charges. If the level of debt to RCV declines, Scottish Water has not delivered its capital programme as planned. Conversely, if the level of debt relative to its RCV increases, Scottish Water is either ahead of schedule in delivering the capital programme, or has underperformed relative to its efficiency targets.

The allowed rate of return on customer retained earnings is 3.22%²¹⁹.

We have made a full allowance for the costs of embedded debt²²⁰. Specifically, we have added the extra interest costs above 4.6% to the cash return on the RCV for each year of the regulatory control period.

Conclusion

We have set an allowed rate of return that reflects the current cost of borrowing for Scottish Water. We have linked this to the retail price index in order to ensure that Scottish Water is not exposed to financing risks resulting from changes to the RPI.

The rate of return that we have allowed is 4.6% for debt and 3.22% for customer retained earnings. This has ensured that Scottish Water should have no preference between debt and retained earnings funding of its investment. We have also allowed Scottish Water the full cost of any embedded debt over the 4.6% allowed rate for new debt.

²¹⁹ 4.6% less the value of the 30% corporation tax shield (1.38% [0.3 x 4.6%])

Embedded debt is debt taken out prior to April 2004 that carries a higher coupon than the allowed rate of return.

Section 4: Funding capital expenditure Chapter 19: How we set the initial RCV

Introduction

In chapter 12 we explained that we have moved towards the RCV method of price setting in this draft determination. The RCV method of price setting separates the financing of the capital programme into the financing and management costs of investment and the cost of purchasing assets. We discussed the infrastructure renewals charge and depreciation in chapters 13 and 16 respectively.

We calculate financing and management costs by multiplying the allowed rate of return and the regulatory capital value. The regulatory capital value will change each year to reflect inflation, asset purchases and depreciation.

This chapter focuses on how we have set the initial value of the RCV. In our methodology consultation²²¹ we outlined four broad approaches to setting the initial RCV for a regulated utility. We can calculate the RCV based on an appropriate asset value; using market based valuations; using financial valuation techniques; or using a comparator approach.

We believe that a variant of the comparator approach to setting the initial RCV is the most appropriate. This approach is consistent with that which Ofwat used to set the RCV of the water only companies.

We have set the initial RCV such that if Scottish Water meets the terms of its regulatory contract, it will be in a financially sustainable position by the end of the regulatory control period. In other words, the cash allowed rate of return in 2009-10 (given the allowed levels of operating cost, capital expenditure and depreciation) is sufficient to ensure that all the targeted cash-based financial ratios are met at the end of the regulatory control period.

We calculated the initial RCV by subtracting asset purchases during the regulatory control period, discounting by the assumed rate of inflation and adding back the depreciation charge and the IRC. We then use the comparator method to assess the reasonableness of this initial regulatory capital value.

Options for setting Scottish Water's initial RCV

The four broad approaches that regulators can use to establish the initial RCV of a regulated utility in the private sector are as follows:

- A market value approach. The RCV adopts the value placed on the company by the financial markets.
- An accounting approach. The RCV takes into account the asset value of the company.
- A comparator approach. The RCV is set through comparison with a similar company that has an RCV.
- A discounted cash flow approach. The RCV is calculated by using financial valuation techniques.

A market value approach

Most of the regulators in the UK used the first approach to estimate the initial RCV of their regulated businesses. However, it is clearly not possible to use this method for a public corporation such as Scottish Water. This is because there is no market value of equity to form the basis of an estimate of RCV.

An accounting approach

There are other precedents where an RCV has been established for a public sector organisation. The CAA, for example, set the RCV for Manchester Airport and in Australia regulators have tended to use asset-based approaches. We could potentially have chosen to set the RCV using one of four common asset-based approaches:

- Depreciated actual cost: this approach is straightforward to implement but tends to understate (possibly significantly) the replacement costs of assets.
- Depreciated indexed historical cost: although this approach is preferable to depreciated actual cost, it does not take account of changes in technology.

²²¹ 'Our work in regulating the Scottish water industry: The calculation of prices', Volume 3, Section 2, Chapter 8, page 88.

- Depreciated optimised replacement cost: this
 approach is theoretically the best asset-based
 approach; however, it is information intensive and
 could be regarded as quite subjective.
- Modern equivalent asset value: this approach has many of the advantages of DORC, but is less subjective as it does not try to assess reductions in cost that could be achieved by optimising the design of the water and sewerage network.

A comparator approach

A second option available to us was to use a comparator approach. This had the advantage of being consistent with the approach that Ofwat used to set the initial RCV of the water only companies. To use this approach, we needed to identify companies that were broadly comparable to Scottish Water. We also needed to identify two sets of information for the comparator company.

- First, we needed to use a financial measure for the comparator company that would also be available for Scottish Water. Possible financial measures were the book value of debt, the book value of fixed assets and the current cost accounting value of fixed assets.
- Second, we needed a financial measure that would be relevant when estimating the RCV. If the comparator company were regulated and had an RCV this could be the RCV itself. If the comparator had no RCV it could be an equity value for the firm.

The discounted cash flow approach

The final option that we considered was the discounted cash flow approach to asset valuation. This would involve using our financial model to calculate Scottish Water's current value. However, we decided that this approach would not be suitable as it would be difficult for us to establish an appropriate discount rate.

Setting an initial RCV for Scottish Water

Introduction

In our methodology consultation we explained that we favoured the comparator approach. Most respondents to the consultation agreed with this view.

The water and sewerage companies in England and Wales provide the most obvious comparators for Scottish Water. There were a number of ways we could use comparisons with these companies to set an initial RCV for Scottish Water. If we had used a straightforward comparator approach, the initial RCV may have required us to make a significant adjustment (either upwards or downwards) to ensure that Scottish Water had sufficient revenue to deliver the objectives set by Ministers (given the borrowing constraints). However, we would also have had to ensure that Scottish Water had no more revenue that it could reasonably need to deliver these objectives. This is consistent with our responsibility to set maximum charges that reflect the lowest reasonable overall cost of delivering the Ministers' objectives. It is also consistent with normal regulatory practice of ensuring that the regulated company should have a tight budgetary constraint.

We have therefore set the RCV at a level in 2009-10 that would not require any adjustment for financial sustainability. We set the initial RCV such that allowed inflation, capital investment and depreciation would result in the targeted level of RCV in 2009-10. We then used the comparator method to verify that the chosen level of the initial RCV was reasonable.

We chose to use the water and waste water companies in England and Wales as the comparators. We did not use the water only companies because they do not provide a reasonable comparator with the scope of activities that is undertaken by Scottish Water.

How we calculate the revenue cap

We calculate the revenue cap by totaling the cash allowed return on the RCV, allowed for operating costs,

PPP costs, depreciation, the infrastructure renewals charge and taxation. This is illustrated in Figure 19.1.

Figure 19.1: Components of the revenue settlement²²²

Total revenue:	£1,018.2m
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Operating costs	£293.8m
PPP charge	£135.8m
Depreciation	£252.3m
Infrastructure renewals charge	£96.8m
Taxation	£14.8m
Embedded debt allowance	£29.1m
Cash Return on RCV	£198.5m - £2.9m ²²³

In order to comply with our targeted financial ratios, Scottish Water would require £1,018.2 million revenue in 2009-10 given the levels of costs and investment that we have allowed. We have set the RCV for 2009-10 such that the cash allowed return on the RCV and the allowance for embedded debt is equal to the difference between the required level of revenue and the allowed for level of costs.

We then divide the allowed cash return on the RCV (net of the embedded debt allowance) by our allowed rate of return of 4.12% (this is based on a 65% gearing ratio, consistent with the financial ratios we use to assess financial sustainability). This equates to an average RCV in 2009-10 of £4,821.8 million.

Allowed investment in 2008-09 is £633.3 million. The allowed depreciation and IRC are £230.7 million and £94.0 million respectively. Inflation is assumed to be 2%. This gives an average RCV in 2008-09 of £4,410.2 million.

Allowed investment in 2007-08 is £593.0 million. The allowed depreciation and IRC are £211.2 million and £91.2 million respectively. Inflation is assumed to be 2%. This gives an average RCV in 2007-08 of £4,031.0 million.

Allowed investment in 2006-07 is £534.3 million. The allowed depreciation and IRC are £187.2 million and £88.6 million respectively. Inflation is assumed to be 2%. This gives an average RCV in 2006-07 of £3,683.8 million.

Adjustments to the average RCV

We have adjusted the average RCV in 2006-07. This reflects allowed investment during 2006-07 and the reduction in the RCV, which we included to compensate customers for the overhang from Quality and Standards II 224 . This removes £274.5 million 225 from the initial RCV. We also adjusted capital spending in each year to take account of the efficiencies that were erroneously claimed by the former East of Scotland Water Authority in 2001 .

The impact of this investment and the other adjustments is summarised in Table 19.1.

Table 19.1: Calculation of the initial RCV

	Outturn prices	2006-07	2007-08	2008-09	2009-10
	Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
plus	Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
plus	New investment	£534.3m	£593.0m	£633.3m	£689.5m
less	Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
less	Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
less	Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
equals	Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
	Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

An initial RCV of £3,794.4 million (£3,519.8 million plus £274.5 million) is therefore consistent with achieving financial sustainability.

We then used the comparator approach to verify that this initial RCV was reasonable. We followed a five-step process, summarised below.

²²² Totals may not add exactly due to rounding.

²²³ £2.9m relates to the current cost working capital adjustment

²²⁴ We discuss the extent of the investment overhang from Quality and Standards II in Chapter 6 of this Volume. We also discuss how we have taken account of the unsubstantiated efficiencies claimed by East of Scotland Water Authority.

^{225 £274.5} million is the value of the outputs remaining to be delivered from Quality and Standards II.

Using the comparator approach to verify the initial RCV

The comparator approach allows us to check the consistency of our initial RCV with those of the companies south of the border. This required us to identify factors that influenced the RCV, which we could also measure for Scottish Water.

Step 1: Establish the factors that may influence the RCV

We identified six factors that seemed broadly to correlate with the RCV of the comparator companies. We adopted the following principles in our approach:

- Information about the factor that could influence the RCV needed to be collected consistently across England, Wales and Scotland. The absence of regulatory accounts limited the choice of factors available to us.
- The factor needed to reflect the value of both the water and waste water businesses of the comparator companies. The RCV in England and Wales is reported for the water and sewerage services combined.
- In principle, there needs to be a relatively steady relationship over time between the factor and the RCV. For example, while we could accept a gradual change over the years, we could not use a factor where there may be very significant changes in the relationship between the factor and the RCV.

Step 2: Analyse the ratio between the factor and the RCV for the water and sewerage companies in England and Wales

We analysed the ratio between the RCV and the selected factor for each water and sewerage company in England and Wales in each year from 1999-2000 to 2003-04. Our analysis allowed us to consider the relationship of each factor to the RCV.

Step 3: Apply the observed outcomes for each factor to the corresponding factor for Scottish Water

We used the average, median, minimum and maximum ratio for each factor in 2002-03 and 2003-04 to calculate an implied initial RCV for Scottish Water.

Step 4: Adjust for PPP costs if appropriate

There is no equivalent in England and Wales to PPP contracts (where the assets are built, financed and operated on a long-term concession basis). Where comparisons considered revenue or total asset bases, it was therefore appropriate to remove costs and revenues associated with PPP.

Step 5: Adjust the implied RCVs to reflect likely changes in the period up to 2005-06

This gives a range of implied Scottish Water RCVs for each factor compared in 2005-06.

The six factors that we identified and were able to use in the comparator analysis were:

- revenue (minus operating costs);
- revenue (minus operating costs and the infrastructure renewals charge);
- historic cost net book value of fixed assets;
- · net debt;
- total customers (water + waste water); and
- total annual volume (water delivered + sewage returned).

Adjusting comparators to 2005-06

Our comparisons used information from 2002-03 and 2003-04. However, we had to determine an initial RCV for 2005-06 – the starting point for the revenue calculation in our financial model.

The usual method for 'rolling forward' an RCV to a future date is to add the total efficient capital investment and subtract the current cost depreciation for each year. Unfortunately, we are not able to know the efficient investment that Scottish Water will deliver in 2005-06, nor do we know the current cost depreciation for 2005-06.

We were, however, able to analyse likely changes in the RCVs of the companies south of the border. In its final determinations for 2005-10, Ofwat forecasts year-end RCVs for each water and sewerage company in 2002-03 year-end prices. These can then be adjusted to 2005-06 prices. We assumed 2.5% RPI for each year beyond 2002-03. The outcome is shown in Table 19.2.

Table 19.2: Rolling forward the RCVs

(Year-end RCVs)	2002-03 (outturn prices)	2003-04 (outturn prices)	2005-06 (2002-03 prices)	2005-06 (outturn prices) ²²⁶
Anglian	£4,032.3m	£4,250.3m	£4,153.0m	£4,472.3m
Dwr Cymru	£2,362.3m	£2,594.2m	£2,806.0m	£3,021.8m
Northumbrian	£2,171.1m	£2,318.2m	£2,421.0m	£2,607.2m
Severn Trent	£4,397.0m	£4,688.3m	£4,853.0m	£5,226.2m
South West	£1,620.3m	£1,750.9m	£1,929.0m	£2,077.3m
Southern	£2,191.8m	£2,335.5m	£2,324.0m	£2,502.3m
Thames	£4,777.6m	£5,027.3m	£5,435.0m	£5,852.9m
United Utilities	£5,156.6m	£5,366.6m	£5,863.0m	£6,313.8m
Wessex	£1,474.4m	£1,580.0m	£1,692.0m	£1,822.1m
Yorkshire	£2,957.1m	£3,145.5m	£3,392.0m	£3,652.8m
Total	£31,140.4m	£33,057.3m	£34,868.0m	£37,549.0m

For the water and waste water companies in England and Wales, the RCVs increased by 20.6% between 2002-03 and 2005-06, and by between 2003-04 and 2005-06 it was 13.6%. We applied these growth rates to the results of our comparator analysis.

Revenue (excluding operating costs)

The first factor we analysed was 'revenue excluding operating costs'. We could have analysed revenue figures. However, we considered that this would not have been appropriate since the RCV method of price setting that is used south of the border takes separate account of an appropriate level of operating costs.

Table 19.3 shows the ratios of RCV to revenue excluding operating costs for each of the English and Welsh water and waste water companies. It covers the period 1999-00 to 2003-04. It also shows the calculated average, median, minimum and maximum ratios for each year.

Table 19.3: Ratios of RCV to revenue (excluding operating costs)

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	7.72	9.11	8.98	9.54	9.05
Dwr Cymru	6.47	8.54	8.61	9.42	10.33
Northumbrian	5.77	9.04	8.67	9.97	10.24
Severn Trent	6.63	7.81	7.81	8.36	8.40
South West	7.91	9.04	9.24	9.76	9.88
Southern	6.61	7.20	7.33	8.17	8.45
Thames	6.56	7.81	7.37	7.53	8.13
United Utilities	7.24	7.34	7.77	8.71	8.55
Wessex	5.62	7.13	7.62	8.32	8.23
Yorkshire	6.11	8.06	7.81	8.38	8.16
Average	6.66	8.11	8.12	8.82	8.94
Median	6.59	7.94	7.81	8.55	8.50
Minimum	5.62	7.13	7.33	7.53	8.13
Maximum	7.91	9.11	9.24	9.97	10.33

The revenue (excluding operating costs) to RCV ratios shown in Table 19.3 generally rise over time. We used the results of this analysis for the years 2002-03 and 2003-04 to check the initial RCV for Scottish Water.

Figure 19.2 shows that there is a strong relationship between revenue minus operating costs and the RCV.

Figure 19.2: Revenue (excluding operating costs) to RCV for England and Wales water and sewerage companies

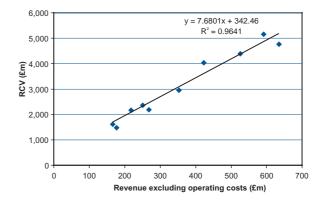
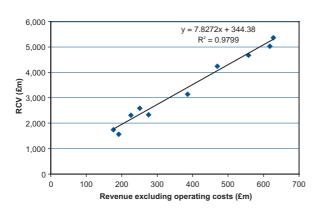


Figure 19.3 shows that there is also a strong relationship between revenue excluding operating costs and the RCV in 2003-04 among the water and waste water companies.

Figure 19.3: 2003-04 revenue (excluding operating costs) to RCV for England and Wales water and sewerage companies



Scottish Water's revenue in 2002-03 was £895.3 million, of which £99.3 million was spent on PPP. We fund PPP activities separately and it is therefore appropriate to exclude them from revenue for the purposes of this comparison. Excluding revenue from PPP activities reduces Scottish Water's revenue to £796 million.

Operating costs in 2002-03 were £192.36 million for water and £169.33 million for waste water.

Scottish Water's revenue excluding operating costs in 2002-03 is therefore £434 million, as shown in Table 19.4.

Table 19.4: Scottish Water's revenue excluding operating costs 2002-03

Revenue excluding operating costs:	£434.4m
Less waste water operating costs	£169.3m
Less water operating costs	£192.3m
Less PPP activities	£99.3m
Scottish Water's 2002-03 revenue	£895.3m

We have used this information to assess the average, median, minimum and maximum initial RCVs for Scottish Water. This is illustrated in Table 19.5.

The table also shows the rolled-forward value of those implied RCVs for 2005-06. The range of implied RCVs for Scottish Water is from £3.9 billion to £5.2 billion.

Table 19.5: Implied RCVs for revenue excluding operating costs based on 2002-03 information

	Ratio of revenue minus operating costs to RCV (from Table 19.3)	Scottish Water revenue minus operating costs	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06
Average	8.81	£434.4m	£3,829.1m	£4,617.1m
Median	8.55	£434.4m	£3,710.6m	£4,474.3m
Minimum	7.53	£434.4m	£3,269.4m	£3,942.2m
Maximum	9.97	£434.4m	£4,332.1m	£5,224.3m

In 2003-04, Scottish Water's revenue excluding operating costs was £477 million. We subtracted £112 million of PPP charges, £209.7 million of water operating costs and £159.4 million of waste water operating costs from revenue of £958.3 million. This is shown in Table 19.6.

Table 19.6: Scottish Water's revenue excluding operating costs 2003-04²²⁷

Scottish Water's 2003-04 revenue	£958.3m
Less PPP activities	£112.0m
Less water operating costs	£209.7m
Less waste water operating costs	£159.4m
Revenue excluding operating costs	£477.1m

Table 19.7 shows the range of implied RCVs for Scottish Water based on the comparison of revenue minus operating costs for 2003-04.

Table 19.7: Implied RCVs using revenue excluding operating costs for 2003-04

	Ratio of revenue minus operating costs to RCV (from Table 19.3)	Scottish Water revenue minus operating costs	Implied RCV for Scottish Water 2003-04	Implied RCV for Scottish Water 2005-06
Average	£8.94m	£477.1m	£4,265.9m	£4,845.5m
Median	£8.50m	£477.1m	£4,054.1m	£4,604.9m
Minimum	£8.13m	£477.1m	£3,879.0m	£4,406.1m
Maximum	£10.33m	£477.1m	£4,929.4m	£5,599.2m

This table shows a range of implied RCVs for Scottish Water of £4.4 billion to £5.6 billion.

²²⁷ Totals may not add up due to rounding.

The revenue excluding operating costs comparisons based on 2002-03 and 2003-04 information suggest that the RCV for Scottish Water in 2005-06 should be in a range £3.9 billion to £5.6 billion. This comparison does not, however, take any account of Scottish Water's relative inefficiency in delivering its capital programme or of the reduced scope of activities delivered by Scottish Water for the level of operating costs incurred.

Revenue (excluding operating costs and infrastructure renewals charge)

Table 19.8 shows the ratios of the RCV for each water and waste water company against its revenue excluding its operating costs and its infrastructure renewals charge. It covers the years from 1999-00 to 2003-04. It also shows the calculated average, median, minimum and maximum ratios for each year.

Table 19.8: Ratios of RCV to revenue (excluding operating costs and the infrastructure renewals charge)

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	8.05	9.76	9.59	10.19	9.60
Dwr Cymru	7.39	10.04	10.02	12.03	12.60
Northumbrian	6.26	10.59	10.07	11.81	12.06
Severn Trent	7.25	8.70	8.69	9.35	9.34
South West	8.21	9.87	10.05	10.65	10.74
Southern	7.05	7.75	7.92	8.97	9.40
Thames	7.02	8.40	8.22	8.55	9.07
United Utilities	8.33	8.75	9.32	10.10	9.53
Wessex	5.94	7.80	8.34	9.23	9.19
Yorkshire	6.72	8.91	8.64	9.33	9.08
Average	7.22	9.06	9.09	10.02	10.06
Median	7.15	8.83	9.01	9.73	9.47
Minimum	5.94	7.75	7.92	8.55	9.07
Maximum	8.33	10.59	10.07	12.03	12.60

Table 19.8 again shows that the ratio of RCV to revenue excluding operating costs and the infrastructure renewal charge generally rises over time in England and Wales.

Figure 19.4 shows that there is a strong relationship between RCV and revenue minus operating costs and infrastructure renewals.

Figure 19.4: 2002-03 revenue (excluding operating costs and IRC) for RCV to England and Wales water and sewerage companies

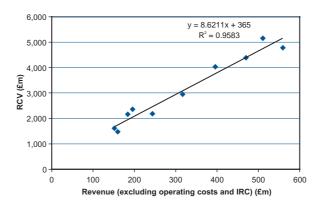
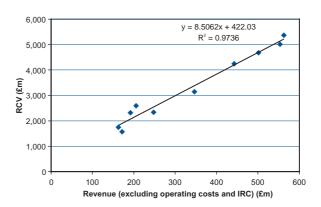


Figure 19.5 shows the same information for 2003-04. It indicates that there is a similarly strong relationship between revenue excluding operating costs and IRC and the RCV.

Figure 19.5: 2003-04 revenue (excluding operating costs and IRC) to RCV for England and Wales water and sewerage companies



In 2002-03 Scottish Water's revenue excluding operating costs was £434 million. Its infrastructure renewals charge for that year was £140 million. Revenue minus operating costs and infrastructure renewals was £294 million. This is shown in Table 19.9.

Table 19.9: Scottish Water's revenue excluding operating costs and IRC

Revenue excluding operating costs and IRC	£294.4m
Less infrastructure renewals charge	£140.0m
Scottish Water's 2002-03 revenue excluding operating costs	£434.4m

Table 19.10 shows the range of implied RCVs for Scottish Water indicated by comparing revenue minus operating costs and IRC for 2002-03 with the RCVs of the companies. We have again used the average, median, minimum and maximum value from our analysis of the companies south of the border.

Table 19.10: Implied RCVs for Scottish Water using revenue excluding operating costs and IRC comparator figures from 2002-03

	Ratio of revenue minus operating costs and IRC to RCV (from Table 19.8)	Scottish Water revenue minus operating costs and IRC	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06
Average	10.02	£294.4m	£2,950.2m	£3,557.3m
Median	9.73	£294.4m	£2,863.2m	£3,452.4m
Minimum	8.55	£294.4m	£2,517.3m	£3,035.4m
Maximum	12.03	£294.4m	£3,541.9m	£4,270.9m

In 2003-04, Scottish Water's revenue excluding operating costs was £477.1 million. The IRC for that year was £143.0 million. Revenue minus operating costs and IRC was therefore £334.1 million. This is shown in Table 19.11.

Table 19.11: Scottish Water's revenue excluding operating costs and IRC 2003-04

Revenue excluding operating costs and IRC	334.1m
Less infrastructure renewals charge	143.0m
Scottish Water's 2003-04 revenue excluding operating costs	477.1m

Table 19.12 shows the range of implied RCVs for Scottish Water based on information for 2003-04.

Table 19.12: Implied RCVs for Scottish Water using revenue excluding operating costs and IRC comparator figures from 2003-04

	Ratio of revenue minus operating costs and IRC to RCV (from Table 19.8)	Scottish Water revenue minus operating costs and RCV	Implied RCV for Scottish Water 2003-04	Implied RCV for Scottish Water 2005-06
Average	10.06	£334.1m	£3,361.9m	£3,818.7m
Median	9.47	£334.1m	£3,162.3m	£3,592.0m
Minimum	9.07	£334.1m	£3,031.7m	£3,443.6m
Maximum	12.60	£334.1m	£4,211.2m	£4,783.4m

The RCV to revenue (excluding operating costs and IRC) comparisons for 2002-03 and 2003-04 suggest that the RCV should be in the range £3.0 billion to £4.8 billion. As before, this comparison does not take any account of the Scottish Water's relative inefficiency in delivering its capital programme or of the reduced scope of activities delivered by Scottish Water for the level of operating costs incurred.

Historic cost net book value of fixed assets

Our second approach considered the relationship between the historic cost net book value of fixed assets of companies south of the border and their RCV. The historic cost net book value of fixed assets is a measure of the value of assets invested in the business. We would have preferred to use the current cost value of assets but Scottish Water did not produce regulatory accounts for the period 2002-04.

Table 19.13 shows the ratios of RCV to historic cost net book value of fixed assets for each of the companies. It covers the period 1999-00 to 2003-04. It also shows the calculated average, median, minimum and maximum ratios for each year.

Table 19.13 Ratio of RCV to historic cost net book value of fixed assets

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	0.96	1.04	1.06	1.10	1.13
Dwr Cymru	0.85	0.90	0.90	0.95	0.99
Northumbrian	0.86	0.98	0.93	0.94	0.96
Severn Trent	0.92	0.92	0.91	0.93	0.96
South West	0.93	0.83	0.83	0.86	0.90
Southern	1.01	0.90	0.83	0.84	0.87
Thames	1.04	1.03	1.02	1.02	1.01
United Utilities	1.02	0.96	0.97	0.98	0.92
Wessex	0.89	0.94	0.96	0.99	1.00
Yorkshire	0.85	0.90	0.88	0.92	0.94
Average	0.93	0.94	0.93	0.95	0.97
Median	0.93	0.93	0.92	0.95	0.96
Minimum	0.85	0.83	0.83	0.84	0.87
Maximum	1.04	1.04	1.06	1.10	1.13

As can be seen from the table, there is a relatively steady relationship over time between the net book value of fixed assets and the RCV for water and waste water companies in England and Wales.

Figure 19.6 illustrates that there is a clear relationship between the historic cost net book value of fixed assets and the RCV for the companies in 2002-03.

Figure 19.6: Comparison of RCVs and historic cost fixed assets for water and sewerage companies in England and Wales in 2002-03

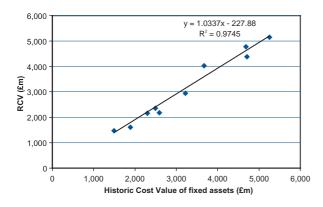
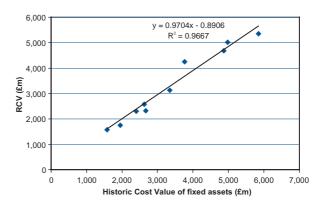


Figure 19.7 shows that there is a similarly strong correlation between the historic cost net book value of fixed assets and the RCV for the companies in 2003-04.

Figure 19.7: Comparison of RCVs and historic cost fixed assets for water and sewerage companies in England and Wales in 2003-04



Scottish Water's net book value for 2002-03 was £2,437.3 million. We have not had to make an adjustment for PPP since these assets are not included in the net book value of Scottish Water's assets.

Table 19.14 illustrates the RCVs based on a comparison of historic cost net asset values with the companies south of the border in 2002-03.

Table 19.14: Implied RCVs using historic cost net book value of fixed assets for 2002-03

	Ratio of historic cost fixed assets to RCV (from Table 19.13)	Scottish Water's historic cost fixed assets	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06
Average	0.95	£2,437.3m	£2,321.5m	£2,799.3m
Median	0.94	£2,437.3m	£2,301.7m	£2,775.3m
Minimum	0.84	£2,437.3m	£2,059.7m	£2,482.3m
Maximum	1.10	£2,437.3m	£2,673.2m	£3,223.3m

Scottish Water's net book value of historic cost assets for 2003-04 was £2,581.2 million. Table 19.15 shows the results of comparisons for 2003-04.

Table 19.15: Implied RCVs using historic cost fixed assets for 2003-04

	Ratio of historic cost fixed assets to RCV (from Table 19.13)	Scottish Water's historic cost fixed assets	Implied RCV for Scottish Water 2003-04	Implied RCV for Scottish Water 2005-06
Average	0.97	£2,581.2m	£2,496.5m	£2,857.7m
Median	0.96	£2,581.2m	£2,486.6m	£2,824.5m
Minimum	0.87	£2,581.2m	£2,255.1m	£2,561.5m
Maximum	1.13	£2,581.2m	£2,912.4m	£3,308.1m

Our comparisons of net book value for 2002-03 and 2003-04 would suggest that the initial RCV for Scottish Water should be in a range from £2.5 billion to £3.3 billion.

Net debt

The initial RCVs for the water and sewerage companies in England and Wales reflected the market valuation of the companies in the period after they were privatised. Markets now consider that the RCV should be broadly equal to the enterprise (equity plus debt) value of the company. In general we could expect there to be a relationship between debt and the RCV. In Scotland, it is not clear that debt has been incurred either prudently or efficiently. There have been a number of instances south of the border where companies have decided to increase their level of debt in an attempt to reduce their cost of capital.

Table 19.16 shows the ratios of RCV to debt for each of the companies each year over the period 1999-00 to 2003-04. It also shows the calculated average, median, minimum and maximum ratios for each year.

Table 19.16: Ratios of RCV to debt

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	2.23	2.30	1.93	1.22	1.22
Dwr Cymru	2.12	1.50	1.14	1.18	1.20
Northumbrian	2.25	1.83	1.69	1.60	1.68
Severn Trent	2.19	2.01	2.01	2.02	2.05
South West	2.80	2.36	1.92	1.74	1.72
Southern	2.32	2.04	1.72	1.74	1.19
Thames	2.22	2.05	2.19	2.11	2.09
United Utilities	2.25	2.09	2.10	2.07	1.89
Wessex	2.08	2.16	2.05	1.43	1.47
Yorkshire	2.89	2.71	2.60	2.53	2.52
Average	2.34	2.11	1.94	1.76	1.70
Median	2.24	2.07	1.97	1.74	1.70
Minimum	2.08	1.50	1.14	1.18	1.19
Maximum	2.89	2.71	2.60	2.53	2.52

Financial restructuring of some of the companies means that there is now no clear relationship between the RCV and levels of debt.

Figure 19.8 shows that in 2002-03 there is a limited correlation between the level of indebtedness and the size of the RCV. The correlation is not as strong as for the other factors that we have examined.

Figure 19.8: Comparison of net debt and RCVs for water and sewerage companies in 2002-03

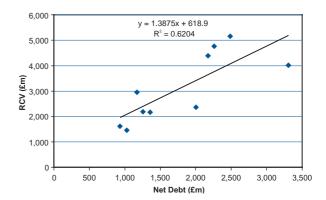
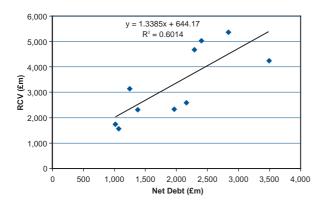


Figure 19.9 shows a similar pattern for 2003-04.

Figure 19.9: Comparison of net debt and RCVs for water and sewerage companies in 2003-04



We calculated Scottish Water's net debt by subtracting £1.7 million cash and short-term investments from the gross debt of £2,150.8 million. This gave net debt of £2,149.2 million.

Table 19.17 shows the results of this comparison for 2002-03.

Table 19.17: Implied RCVs using net debt for 2002-03

	Ratio of RCV to net debt (from Table 19.16)	Scottish Water's net debt 2002-03	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06
Average	1.76	£2,149.2m	£3,792.3m	£4,572.7m
Median	1.74	£2,149.2m	£3,741.7m	£4,511.7m
Minimum	1.18	£2,149.2m	£2,530.7m	£3,051.6m
Maximum	2.53	£2,149.2m	£5,429.6m	£6,547.0m

In 2003-04, Scottish Water's net debt was £2,127.9 million.

Table 19.18 shows the results of a comparison based on debt for 2003-04.

Table 19.18: Implied RCVs using net debt for 2003-04

	Ratio of net debt to RCV (from Table 19.16)	Scottish Water's net debt 2003-04	Implied RCV for Scottish Water 2003-04	Implied RCV for Scottish Water 2005-06
Average	1.70	£2,127.9m	£3,621.4m	£4,113.5m
Median	1.70	£2,127.9m	£3,620.3m	£4,112.2m
Minimum	1.19	£2,127.9m	£2,524.8m	£2,867.8m
Maximum	2.52	£2,127.9m	£5,357.7m	£6,085.7m

The net debt comparisons for 2002-03 and 2003-04 suggest that the initial RCV for Scottish Water should be in the range £2.9 billion to £6.5 billion.

Water and waste water customers

We also examined the relationship between the total number of connected customers and the RCV. Our hypothesis was that the greater the number of connected customers, the greater the RCV. We made this comparison using the total number of water and waste water customers.

We subtracted the waste water customers of Scottish Water who are served by PPP contracts.

Table 19.19 shows the ratio of RCV to total water and waste water customers for each of the water and waste water companies in England and Wales between 1999-2000 and 2003-04. It also shows the calculated average, median, minimum and maximum ratios for each year.

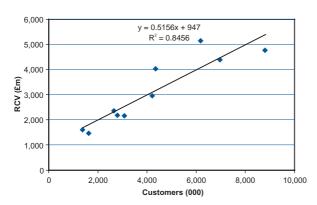
Table 19.19: Ratios of RCV to water and waste water customer numbers

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	0.77	0.86	0.89	0.93	0.97
Dwr Cymru	0.69	0.78	0.80	0.89	0.98
Northumbrian	0.55	0.66	0.67	0.71	0.75
Severn Trent	0.60	0.60	0.60	0.63	0.67
South West	1.10	1.03	1.08	1.18	1.26
Southern	0.78	0.76	0.74	0.78	0.83
Thames	0.50	0.51	0.52	0.54	0.57
United Utilities	0.76	0.73	0.77	0.83	0.86
Wessex	0.72	0.80	0.84	0.91	0.96
Yorkshire	0.58	0.62	0.65	0.70	0.74
Average	0.71	0.74	0.76	0.81	0.86
Median	0.71	0.75	0.76	0.81	0.85
Minimum	0.50	0.51	0.52	0.54	0.57
Maximum	1.10	1.03	1.08	1.18	1.26

This analysis has revealed quite large variations between the companies, but also that there is a general increase in the ratio over time. This probably reflects the increasing investment in improving quality standards.

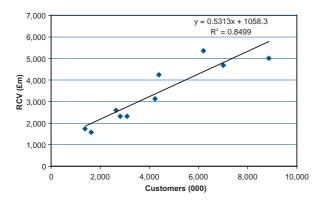
Figure 19.10 shows that there is a clear relationship between customer numbers and the RCV for each company in 2002-03.

Figure 19.10: Customer numbers compared with RCV for England and Wales in 2002-03



This pattern is repeated if we make the same comparison for 2003-04. Figure 19.11 illustrates this comparison.

Figure 19.11: Customer numbers compared with RCV for England and Wales in 2003-04



Scottish Water had 2.389 million connected properties for water and 2.232 million connected properties for waste water in 2002-03. There were 4.622 million customers in 2002-03.

Scottish Water does not report the number of properties connected to PPP treatment works. We cannot therefore easily subtract this figure from the total customer base served.

However, Scottish Water does report the total load (a measure of the strength of sewage) of sewage receiving treatment through PPP works and the total load for Scotland. We have assumed that the load characteristics of PPP customers are the same as those for non-PPP customers. This has allowed us to determine the number of non-PPP waste water customers.

Table 19.20 illustrates this calculation for 2002-03. We have divided the total load receiving treatment through PPP assets by the total load receiving secondary treatment. This suggests that 48.9% of Scottish Water's waste water customers are served by PPP assets. The total number of Scottish Water waste water customers served by non-PPP sites is therefore 1.140 million. Scottish Water therefore has 3.53 million customers for the purposes of this analysis.

Table 19.20: Implied number of non-PPP waste water customers

Total load receiving treatment through secondary treatment works	67,515 tonnes
Total load receiving secondary treatment	138,045 tonnes
% treated at PPP treatment works	48.9%
Implied number of Scottish Water waste water customers	1.14 million

Table 19.21 shows the results of our analysis using customer numbers in 2002-03.

Table 19.21: Implied RCVs using customer numbers in 2002-03

	Ratio of RCV to customer numbers (from Table 19.19)	Scottish Water's customer numbers (water plus waste water) 2002-03 (million)	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06
Average	0.81	3.53	£2,861.0m	£3,449.8m
Median	0.81	3.53	£2,855.9m	£3,443.7m
Minimum	0.54	3.53	£1,915.9m	£2,310.2m
Maximum	1.18	3.53	£4,159.6m	£5,015.6m

In 2003-04, Scottish Water had 2.481 million connected properties for water and 2.254 million connected properties for waste water. This gave a total number of customers in 2003-04 of 4.735 million.

Table 19.22 shows our calculation of the total number of customers served directly by Scottish Water in 2003-04.

Table 19.22: Implied number of non-PPP waste water customers

Total load receiving treatment through secondary treatment works	73,626 tonnes
Total load receiving secondary treatment	148,141 tonnes
% treated at PPP treatment works	49.7%
Implied number of waste water customers	1.134 million

For the purposes of this analysis, Scottish Water had 3.625 million customers in 2003-04.

Table 19.23 shows the results of the customer number comparison for 2003-04.

Table 19.23: Implied RCVs using customer numbers for 2003-04

	Ratio of RCV to customer numbers (from Table 19.19)	Scottish Water's customer numbers (water plus waste water) 2003-04 (million)	Implied RCV for Scottish Water 2003-04	Implied RCV for Scottish Water 2005-06
Average	0.86	3.62	£3,107.5m	£3,529.8m
Median	0.85	3.62	£3,062.4m	£3,478.5m
Minimum	0.57	3.62	£2,049.7m	£2,328.2m
Maximum	1.26	3.62	£4,563.7m	£5,183.8m

The customer numbers comparisons for 2002-03 and 2003-04 would suggest an initial RCV for Scottish Water of between £2.3 billion and £5.2 billion.

We would not want to rely solely on this comparison since it values water and waste water customers equally. This is likely to benefit Scottish Water (with a low proportion of waste water customers) because waste water assets typically cost more than clean water assets.

A water and waste water company with a water only company in its area will have a relatively higher proportion of waste water customers. This contrasts with Scottish Water where many waste water customers in its area are served by PPP.

Water and waste water volumes

We also examined the relationship between the output of the water companies south of the border and their RCV. Our analysis used the volume of water delivered rather than the volume of water treated. We do not believe that Scottish Water is operating at an economic level of leakage. Using the volume of water treated would reward Scottish Water for having a high level of leakage.

In order to compare outputs objectively we subtracted the volume of waste water treated by PPP works from the total outputs of Scottish Water. We adjusted waste water volumes in the same way that we had adjusted waste water customer numbers.

Table 19.24 shows the ratios of RCV to water and waste water volumes for each water and waste water company in England and Wales. It also shows the calculated average, median, minimum and maximum ratios for each year.

Table 19.24: Ratios of RCV to water and waste water volumes

	1999-00	2000-01	2001-02	2002-03	2003-04
Anglian	1.58	1.80	1.91	2.00	2.12
Dwr Cymru	1.33	1.49	1.59	1.80	1.98
Northumbrian	1.05	1.28	1.30	1.40	1.50
Severn Trent	1.26	1.29	1.30	1.43	1.43
South West	2.38	2.27	2.33	2.56	2.68
Southern	1.59	1.55	1.55	1.64	1.76
Thames	0.90	0.90	0.91	0.95	0.97
United Utilities	1.54	1.49	1.57	1.70	1.75
Wessex	1.44	1.59	1.69	1.87	1.89
Yorkshire	1.25	1.35	1.36	1.50	1.59
Average	1.43	1.50	1.55	1.69	1.77
Median	1.39	1.49	1.56	1.67	1.76
Minimu	0.90	0.90	0.91	0.95	0.97
Maximu	2.38	2.27	2.33	2.56	2.68

This table shows that, in general, the ratio is increasing over time. There are some differences between the companies in the level of the ratio.

Figure 19.12 shows that there is a reasonable correlation between the total output of the companies and their RCVs.

Figure 19.12: Comparison of RCV with water delivered and waste water returned for 2002-03

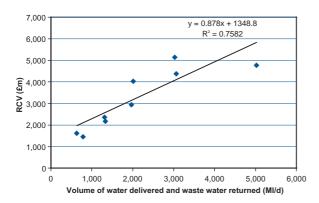
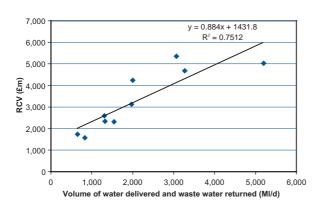


Figure 19.13 shows the same analysis for 2003-04.

Figure 19.13: Comparison of RCV with water delivered and waste water returned for 2003-04



In 2002-03, Scottish Water delivered 1,374.3 MI/d of water and collected 1,068.9 MI/d of sewage. We again assumed that 48.9% of sewage was returned to PPP works. The adjusted sewage volume for this comparison is therefore 546.1 MI/d.

The total amount of water delivered and waste water returned was therefore 1,920.4 MI.

Table 19.25 shows the results of our analysis of total volumes of water and waste water in 2002-03.

Table 19.25: Implied RCVs using volumes for 2002-03

	Ratio of RCV to volume (from Table 19.24)	Scottish Water's volume (water delivered plus sewage returned) 2002-03 (MI/d)	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06	
Average	1.69	1,920.4	£3,238.4m	£3,904.9m	
Median	1.67	1,920.4	£3,214.6m	£3,876.2m	
Minimum	0.95	1,920.4	£1,826.5m	£2,202.3m	
Maximum	2.56	1,920.4	£4,910.5m	£5,921.5 m	

In 2003-04, Scottish Water delivered 1,378.4 Ml/d of water and collected 928.8 Ml/d of sewage. We again assumed that 49.7% of sewage was returned to PPP works in 2003-04. The total water delivered and waste water returned for the purpose of this analysis was therefore 1,845.6 Ml/d.

Table 19.26 shows the results of this analysis of total volumes of water and waste water in 2003-04.

Table 19.26: Implied RCVs using volumes for 2003-04

	Ratio of RCV to volume (from Table 19.24)	Scottish Water's volume (water delivered plus sewage returned) 2003-04 (MI/d)	Implied RCV for Scottish Water 2002-03	Implied RCV for Scottish Water 2005-06	
Average	1.77	1,845.6	£3,260.7m	£3,703.8m	
Median	1.75	1,845.6	£3,236.0m	£3,675.7m	
Minimum	0.97	1,845.6	£1,784.5m	£2,027.0m	
Maximum	2.68	1,845.6	£4,938.5m	£5,609.6m	

The comparisons of RCV to total volumes suggest that the initial RCV for Scottish Water should be in the range £2 billion to £5.9 billion.

As with the other methods of comparison, we would not want to rely wholly on this analysis of volumes. This analysis would probably unduly favour Scottish Water as we have assumed the same standards of water and treatment on both sides of the border. We also assume that the assets required to treat one unit of water will be the same as the assets required to treat one unit of waste water. This will benefit a company with a relatively lower proportion of waste water customers.

Conclusions

We do not believe that we can rely solely on one method of comparison. Some of these methods tend to favour Scottish Water (volumes, customer numbers and revenue-based comparisons), while some would seem to disadvantage Scottish Water (historic cost assets). However, we believe that our analysis is broadly consistent with the approximate £3.8 billion initial RCV that is required to ensure that Scottish Water would be in a financially sustainable position at the end of this regulatory control period.

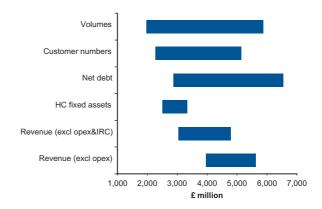
Table 19.27 summarises the results of each of the different approaches. The table shows the reliability of the comparison as measured by the average R^2 of the correlation. The closer the R^2 value is to 100%, the more we can rely on that ratio.

Table 19.27: Range of RCVs implied by each comparator approach

	Minimum	Maximum	Average R ²
Revenue (minus operating costs)	£3.9bn	£5.6bn	97.2%
Revenue (minus operating costs & IRC)	£3.0bn	£4.8bn	95.8%
Historic cost fixed assets	£2.5bn	£3.3bn	97.1%
Net debt	£2.9bn	£6.5bn	61.1%
Customer numbers	£2.3bn	£5.2bn	84.8%
Volumes	£2.0bn	£6.0bn	75.4%

There is no single RCV that satisfies each of the comparisons. Indeed, the two comparisons with the strongest relationship (revenue (minus operating costs) and historic cost fixed assets) produce ranges that do not overlap. Figure 19.14 shows the ranges for each of the comparisons.

Figure 19.14: Ranges implied by comparators for Scottish Water's initial RCV at 31 March 2006



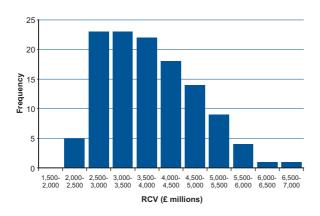
It suggests an initial RCV of £3,814 million. Table 19.28 illustrates this analysis. This is fully consistent with the approximate £3.8 billion initial RCV required for financial sustainability at the end of the regulatory control period.

Table 19.28: Implied RCV for Scottish Water, for each method of comparison

Year-end 2005-06 RCV	Turnover (excl opex)			(excl opex IRC)	HC fixed	d assets	Net	debt	Customer	numbers	Volu	mes	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	Average
Anglian	£4,994.5m	£4,903.0m	£3,616.2m	£3,642.9m	£3,223.3m	£3,308.1m	£3,159.3m	£2,938.8m	£3,948.0m	£3,971.6m	£4,635.6m	£4,451.1m	£3,899.4m
Dwr Cymru	£4,933.8m	£5,599.2m	£4,270.9m	£4,783.4m	£2,779.7m	£2,891.8m	£3,051.6m	£2,899.1m	£3,795.5m	£4,025.9m	£4,164.5m	£4,153.7m	£3,945.8m
Northumbrian	£5,224.3m	£5,552.2m	£4,190.9m	£4,578.8m	£2,770.9m	£2,828.4m	£4,141.5m	£4,065.4m	£3,004.1m	£3,075.7m	£3,243.4m	£3,138.5m	£3,817.8m
Severn Trent	£4,379.4m	£4,550.4m	£3,319.7m	£3,546.1m	£2,743.2m	£2,820.6m	£5,239.6m	£4,943.4m	£2,685.0m	£2,745.9m	£3,322.9m	£3,001.4m	£3,608.1m
South West	£5,111.1m	£5,352.1m	£3,781.1m	£4,076.9m	£2,519.9m	£2,625.7m	£4,505.6m	£4,159.0m	£5,015.6m	£5,183.8m	£5,921.5m	£5,609.6m	£4,488.5m
Southern	£4,281.6m	£4,578.5m	£3,183.3m	£3,568.4m	£2,482.3m	£2,561.5m	£4,517.8m	£2,867.8m	£3,336.5m	£3,405.6m	£3,808.1m	£3,687.9m	£3,523.3m
Thames	£3,942.2m	£4,406.1m	£3,035.4m	£3,443.6m	£2,995.7m	£2,958.3m	£5,477.1m	£5,050.2m	£2,310.2m	£2,328.2m	£2,202.3m	£2,027.0m	£3,348.0m
United Utilities	£4,560.6m	£4,631.4m	£3,585.2m	£3,615.6m	£2,884.5m	£2,687.6m	£5,372.4m	£4,566.9m	£3,550.8m	£3,551.5m	£3,944.2m	£3,663.5m	£3,884.5m
Wessex	£4,355.9m	£4,460.4m	£3,278.1m	£3,486.6m	£2,895.3m	£2,923.8m	£3,715.4m	£3,558.6m	£3,864.2m	£3,961.0m	£4,331.9m	£3,968.1m	£3,733.3m
Yorkshire	£4,387.9m	£4,421.8m	£3,312.2m	£3,445.1m	£2,697.9m	£2,751.3m	£6,547.0m	£6,085.7m	£2,988.2m	£3,048.5m	£3,474.5m	£3,337.1m	£3,874.8m
Average	£4,617.1m	£4,845.5m	£3,557.3m	£3,818.7m	£2,799.3m	£2,835.7m	£4,572.7m	£4,113.5m	£3,449.8m	£3,529.8m	£3,904.9m	£3,703.8m	£3,812.3m

Figure 19.14 illustrates that the most common results of our comparisons are between £2.5 billion and £3.5 billion. Answers above £5 billion are relatively rare but are sufficient to increase the average.

Figure 19.15: Frequency of RCV occurrence using all means of comparison



Summary

Our priority is to ensure that Scottish Water is financially sustainable. We have used the same ratios that Ofwat used in its 2004 price determinations for the companies south of the border to measure the financial sustainability of Scottish Water. Our analysis has suggested that Scottish Water needs an initial RCV of approximately £3.8 billion in order to ensure that it remains financially sustainable at the end of the 2006-10 regulatory control period.

We used the comparator approach to check whether an initial RCV was consistent with the regulatory capital value of the companies south of the border. This is the same approach that Ofwat successfully used to set the initial RCV of the water only companies in England and Wales.

Our comparisons considered the relationship between a range of financial, customer and asset factors and the RCVs of the companies south of the border.

Our analysis would seem to confirm that an initial RCV of £3.8 billion is reasonable. Indeed this RCV may be higher than would be justified if we had adjusted our comparisons to take account of Scottish Water's relative efficiency, its level of leakage or its level of customer service.

Section 4: Funding capital expenditure Chapter 20: Summary of costs of funding the capital programme

Introduction

In Chapter 12 we explained our move towards the regulatory capital value approach to price setting. We explained that this approach included the cost of financing and managing the asset base and the costs of replacing the assets as and when necessary. The cost of financing and managing the replacement of assets is termed the cash allowed return on the RCV. It is calculated by multiplying the average regulatory capital value for each year by the allowed rate of return. The allowance for embedded debt also needs to be added to this rate of return. The costs of asset replacement are recognised in the depreciation and infrastructure charges. In previous chapters we have set out our calculation of each of these elements. This chapter provides a summary of asset financing and replacement costs.

Financing the capital programme

The regulatory capital value in each year of this regulatory control period is set out in Table 20.1. The table also shows the depreciation and infrastructure renewals charges in each year. All investment is adjusted for inflation. The inflation adjustment for investment is the Construction Output Price Index (COPI) and is 3% compound. The adjustment to the RCV for inflation is made with reference to the consumer price index (CPI).

Table 20.1: Calculation of the initial RCV

Outturn prices	2006-07	2007-08	2008-09	2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
New investment	£534.3m	£593.0m	£633.3m	£689.5m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

The allowed rate of return was 0.72% real post-tax. We used an assumed debt/customer retained earnings rate of 65%. We therefore multiplied the RCV in each year by 4.12%. This is illustrated in Table 20.2. The table also

includes the embedded debt allowance. The embedded debt allowance was set to cover all of the debt interest cost in excess of 4.6% nominal pre-tax. The table also shows the working capital adjustment for each year. This is the assumed annual percentage increase or decrease in the value of Scottish Water's working capital stock.

Table 20.2: The cash allowed return on the RCV (outturn prices)

Cash allowed return on the RCV	2006-07	2007-08	2008-09	2009-10
RCV average value	£3,683.8	£4,031.0	£4,410.2	£4,821.8
Rate of return	4.12%	4.12%	4.12%	4.12%
Sub-total	£151.7	£166.0	£181.6	£198.5
Embedded debt allowance	£33.8	£32.3	£30.7	£29.1
Sub-total	£185.5	£198.2	£212.3	£227.7
Working capital adjustment	-£2.8	-£2.4	-£2.7	-£2.9
Total	£182.7	£195.9	£209.6	£224.8

Depreciation and infrastructure charges are shown in Table 20.3.

Table 20.3: Depreciation and infrastructure renewals charges 2006-10 (outturn prices)

Depreciation and infrastructure renewals charges	2006-07	2007-08	2008-09	2009-10
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
IRC	£88.6m	£91.2m	£94.0m	£96.8m
Total	£275.7m	£302.4m	£324.7m	£349.1m

The total asset financing costs in this draft determination are outlined in Table 20.4.

Table 20.4: Total asset financing costs 2006-10

Cash allowed return on the RCV	2006-07	2007-08	2008-09	2009-10
Cash allowed return on the RCV	£182.7m	£195.9m	£209.6m	£224.8m
IRC	£88.6m	£91.2m	£94.0m	£96.8m
Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Total	£458.4m	£498.3m	£ 534.3 m	£573.9m

In Table 20.5 we show the total capital investment included in the financial model for 2009-10. The table reconciles the total capital investment, asset-financing costs paid by customers and new borrowing from the

Scottish Executive. We show the reconciliation for 2009-10 as we have set the RCV so that there is no additional revenue required from customers to ensure Scottish Water is financially sustainable.

Table 20.5: Reconciliation of total allowed investment with net new borrowing

	Cash out 2009-10	Cash in 2009-10
Total capital expenditure	£689.5m	
Cash return on RCV minus interest		£57.2m
Working capital adjustments		£12.6m
Current cost depreciation		£252.3m
Infrastructure renewals charge		£96.8m
New debt		£270.6m
Total		£689.5m

Conclusion

The asset financing costs in this review increase from £458m to £574m during this regulatory control period. These costs are a very significant proportion of the customer's bill. Further net increases in investment (ie above the level of depreciation and infrastructure renewals charges) will tend to increase customers' bills. If Scottish Water did not have access to government borrowing or was required to pay dividends then the allowed rate of return would have to be higher. This would also increase customers' bills.

Section 4: Funding capital expenditure Chapter 21: Sensitivity analysis of the cash allowed rate of return

Introduction

In the Strategic Review of Charges 2002-06, we used a cash flow balancing approach. The approach took account of the need to improve the Scottish water industry's financial sustainability. At that Strategic Review we could not make progress towards the RCV method of price setting. This was because the information that was then available about the modern equivalent asset value of the above-ground assets of the Scottish water industry was not sufficiently reliable. This asset value is an important element of the RCV method of price setting as this method seeks to ensure that sufficient resources are provided not only to operate the assets but also to refurbish, replace and finance them. As such, an improved understanding of the modern equivalent asset value was necessary.

Since then Scottish Water has made progress in developing its understanding of the asset base. As a result, we have decided to move towards the RCV method of price setting. This will bring the method for calculating prices for Scottish Water into line with that which is used by other regulators in the UK.

Moving towards the RCV method of price setting has required us to establish an initial RCV and an allowed rate of return. Our analysis is described in Chapters 19 and 20 of this volume. The RCV for each year reflects the efficient investment that has been delivered and the depreciation and infrastructure renewals costs that have been charged to the income and expenditure account.

The investment programme for the 2006-10 regulatory control period is described in detail in Chapter 14 and 15. The calculation of the depreciation and infrastructure renewals charge is outlined in Chapters 13 and 16.

This chapter looks first at the factors that influence the cash allowed rate of return on the RCV. It then considers the implications of the new Commission's statutory duty to set maximum charges at a level that is consistent with the delivery of Ministerial objectives by Scottish Water at the lowest reasonable overall cost. It concludes by illustrating the sensitivity of revenue to changes in the factors that influence the cash allowed return on the RCV.

Factors that influence the cash allowed rate of return

The factors that influence the cash allowed return on the RCV are the:

- initial RCV.
- allowed rate of return,
- allowance for embedded debt,
- investment profile,
- mix of investment between capital maintenance and enhancement.
- depreciation charges,
- infrastructure renewals charges, and
- rate of inflation.

The calculation of the allowed rate of return is illustrated in Figure 21.1.

Figure 21.1: The calculation of the cash rallowed return on the RCV

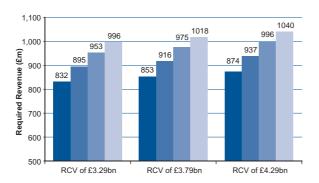


The cash allowed return on the RCV is the product of the RCV and the allowed rate of return. We have also made an allowance for embedded debt (ie the cost of all debt outstanding at April 2004 that has a coupon higher than 4.6% nominal pre-tax). The extra interest costs incurred on this embedded debt is added to the cash allowed rate of return that we have calculated by multiplying the allowed rate of return and the RCV.

The RCV is typically a very large number. In Scottish Water's case it starts at £3.52 billion and grows to £5.04 billion over the regulatory control period. The cash allowed return on the RCV is, however, a very small

number. In Scottish Water's case the allowed rate of return is 3.22% nominal post-tax. The following figure illustrates that, all else being equal, even a relatively large change in the RCV (plus or minus £500 million) would not impact on the allowed level of revenue by a significant amount.

Figure 21.2: The sensitivity of revenue to the initial RCV



The RCV will increase over the regulatory control period to reflect investment in enhancing the water and sewerage assets that are operated by Scottish Water. It will also increase in line with inflation so that the depreciation and infrastructure renewals charges properly reflect the cost of the assets used.

The cash allowed return will increase in line with the increase in the RCV that is brought about by enhancement investment expenditure and inflation.

During the regulatory control period, Scottish Water's embedded debt reduces as older debt is replaced by newer, lower coupon debt. The cash adjustment that we make to the cash allowed rate of return reduces as a result.

The following table summarises the cash allowed rate of return during the 2006-10 regulatory control period.

Table 21.1: Calculation of the cash allowed rate of return

	2006-07	2007-08	2008-09	2009-10
Average RCV for year (£bn)	3.68	4.03	4.41	4.82
Allowed rate of return (%)	4.12%	4.12%	4.12%	4.12%
Cash allowed rate of return before adjustment for embedded debt	£151.7m	£166.0	£181.6m	£198.5m
Embedded debt allowance	£33.8m	£32.3m	£30.7m	£29.1m
Cash allowed rate of return	£185.50m	£198.22m	£212.27m	£227.66m

The purpose of the allowed cash return is to cover the costs of financing and managing the assets that are required to provide a water and sewerage service to customers. The cash to replace existing assets that reach the end of their useful lives is made available through the depreciation and infrastructure renewals charges. The cash to invest in the enhancement of the asset base comes either from customer retained earnings (ie any surplus generated by Scottish Water after tax) or through new debt.

It follows that the cash allowed return will increase more quickly if the proportion of investment dedicated to enhancement of the current asset base is increased.

Setting maximum charges that reflect lowest reasonable overall cost

Comparison of duties

Ofwat has a duty to ensure that an efficient company can finance its functions. Most analysts now expect that water companies will be cash negative (ie they will have to increase their net borrowing) each year for the foreseeable future. Ofwat therefore has to set prices at a level that will ensure that debt and equity investors will remain willing to provide the necessary investment. Ofwat consults frequently with investors and the credit rating agencies to ensure that the companies will be able to finance their functions. Ofwat worked with the credit rating agencies to identify five important financial ratios to measure the financial strength of the companies south of the border. It is generally accepted that if a company is broadly compliant with these financial ratios then it should be able to finance its functions.

Our role is somewhat different. We have a duty to set maximum charges at a level that is consistent with Scottish Water delivering Ministerial objectives at the lowest reasonable overall cost. Scottish Water is able to borrow from the Scottish Executive at preferential rates and this should, therefore, be reflected in price limits.

The Ministerial Guidance that we received in February made it clear that Ministers did not want prices to be reduced in the current regulatory period if this reduction was not likely to be sustainable and if real increases in price were to become necessary as a consequence. Ministers also stated that they wanted the financial strength of Scottish Water to be improved during the regulatory control period.

We have set maximum charges at the lowest level that is consistent with this guidance. Our calculations of price limits have taken account of the actual cost of finance incurred by Scottish Water and a reasonable expectation of the improvement in efficiency that Scottish Water should be required to achieve. These calculations have also taken account of the resources that Scottish Water should reasonably require if its financial position over the regulatory control period is to be strengthened modestly. We measure the improvement in financial strength using the debt to RCV ratio.

Allowed rate of return comparison

In response to our methodology consultation, both Scottish Water and Water UK²²⁸ argued that our proposals for setting the cost of capital for Scottish Water did not properly reflect the risks of the water industry in Scotland. They suggested that Scottish Water's cost of capital should reflect the opportunity cost of the capital that is made available to it. We discussed our response to this suggestion in Chapter 18.

As we outlined above, Ofwat has a duty to ensure that an efficient company can finance its functions. In determining the cost of capital for the industry, Ofwat has to allow a cost of capital that will enable the efficient companies to finance their functions. This does not have to be the lowest possible cost of capital.

The example of Glas Cymru, the owner of Welsh Water, is interesting²²⁹. Glas Cymru is a company limited by guarantee that has no shareholders. It does not, therefore, pay any dividends. The company is funded solely by debt and retained earnings. Welsh Water has made a commitment to reduce customers' bills to the maximum extent possible while maintaining the financial strength required to attract new capital.

It has recently announced that it will increase annual prices to the average household by £16 less than the price cap applied by Ofwat in its 2004 price determination. This is possible because Glas Cymru can finance its functions at a much lower cost of capital than that which Ofwat considered necessary for the industry as a whole. Our view is that if Ofwat had been responsible for regulating Welsh Water alone, it may have set a different cost of capital in its price determination for Welsh Water.

In 2003-04, Welsh Water had a regulatory capital value of just under £2.6 billion. It paid total interest of £142 million. Retained earnings were either reinvested in the operation of Welsh Water (improving the financial strength of the company) or distributed to customers in the form of lower bills. This implies that the cost of capital for Welsh Water was 5.47% nominal pre-tax. The post-tax, real cost of capital was 1.33%²³⁰. This compares very favourably with the 5.1% real post-tax cost of capital that Ofwat allowed the industry as a whole.

We have set the allowed rate of return for Scottish Water at 0.72% real post-tax. However, we have also allowed the full cost of all of the embedded debt (with coupons higher than 4.6% nominal pre-tax) that Scottish Water had outstanding at April 2004. We calculate that this increases the actual rate of return that we have allowed to Scottish Water to:

- 1.36% in 2006-07;
- 1.28% in 2007-08;
- 1.21% in 2008-09; and
- 1.14% in 2009-10.

²²⁸ The trade association that represents the water and sewerage undertakers in the UK.

We included a case study on Glas Cymru in Chapter 5 of Volume 4.

²³⁰ All of the debt interest was allowable for the purposes of reducing taxation; this reduces the post-tax cost of capital by 30%. We have assumed a rate of retail price inflation of 2.5% for the purposes of this calculation.

This comparison demonstrates that Scottish Water is actually being allowed a broadly equivalent cost of capital to that required by Welsh Water to finance its functions in 2003-04.

To set the allowed rate of return at a higher level would seem in the current context to be inconsistent with our duty to set maximum charges at a level consistent with Scottish Water delivering the Ministerial objectives at the lowest reasonable overall cost. In coming to this conclusion, we have paid particular regard to the fact that Scottish Water can access sufficient government borrowing to deliver the required investment programme. We have also ensured that if Scottish Water delivers its regulatory contract, it will comply with the financial ratios identified by Ofwat and the credit rating agencies as being good indicators of financial health.

Measuring financial performance by key ratios

In its price determinations in 2004, Ofwat used five ratios to measure the financial strength of the companies south of the border. These ratios are set out in Table 21.2.

Table 21.2: Ofwat 2004 price determinations – key financial ratios

Ratio	Formula	Target ²³¹	
Cash interest cover	(net operating cashflow ²³² – tax)/interest expenses	Around 3	
Adjusted cash interest cover	(net operating cashflow – depreciation – infrastructure renewals charge – tax)/interest expenses	Around 1.6	
Funds from operations/debt	(net operating cashflow – tax – interest)/net debt	Greater than 13%	
Retained cashflow/debt	(net operating cashflow – tax – interest – dividends)/net debt	Greater than 7%	
Gearing	Net debt/RCV	Less than 65%	

In 1999, Ofwat used a slightly different suite of ratios. Our advice to the Scottish Ministers in the Strategic Review of Charges 2002-06 sought to be consistent with the two ratios outlined in Table 22.3.

Table 21.3: Ofwat 1999 price determinations – key financial ratios

Ratio	Formula	Target
Debt payback (EBITDA)	Net debt/net operating cashflow	Maximum 5 years
Debt payback (EBDA)	(Net debt)/(net operating cashflow – interest – tax)	Maximum 7 years

We believe that it is in customers' interests to ensure that Scottish Water is financially sustainable. Our view is that the ratios adopted by Ofwat represent a good measure of financial sustainability. This explains our decision to set the initial RCV at a level which would allow Scottish Water, if it meets the terms of its regulatory contract, to comply with all the cash-based financial ratios.

Implications of the ratios

It is important to understand the factors that affect the calculated value of all of the ratios. For example, depreciation levels do affect the cash interest cover ratio, but do not impact on the adjusted cash interest cover ratio. The factors that will impact on all of the ratios are the level of revenue, the level of operating costs incurred, the level of tax and the size of the capital programme.

The allowed cash return will impact on the level of revenue that is calculated by the model. The size of the capital programme will impact on the RCV in each year of the regulatory control period and consequently will impact on the allowed cash return.

The overall level of prices is also sensitive to the level of tax that is expected and the level of operating cost, although neither of these have any effect on the allowed cash rate of return.

How the financial model works

The financial model calculates a level of revenue that is based on the formula shown in Figure 21.3.

²³¹ Where a ratio is required to be 'around' a particular figure, we have assumed that it should be within a range of plus or minus 25% of the targeted value.

²³² Net operating cashflow is equal to operating profit plus depreciation plus infrastructure renewals plus changes in working capital.

Figure 21.3: How the model calculates revenue²³³

Cash Return on RCV					
Allowed for Operating Costs					
Depreciation					
Infrastructure Renewals Charge					
PPP					
Tax					
Other adjustments ²³⁴					

The model adds the allowed cash return on the RCV, the allowed for operating costs, the depreciation charge, the infrastructure renewals charge, the costs of the PPP contracts, tax and any change in working capital.

The model also allows us to intervene manually and will recalculate all of the financial ratios based on our revised revenue cap.

When do we adjust the modelled answer?

In setting maximum charges we have changed the modelled answer to ensure that:

- the financial strength of Scottish Water improves over the regulatory control period;
- prices can remain broadly stable during the regulatory control periods; and
- prices are not cut in an unsustainable way that would lead to real increases in charges for customers in future years.

These manual interventions have allowed us to meet the terms of the Ministers' Guidance.

In altering the revenue level calculated by the model we have sought to:

- ensure that revenue is no higher than it needs to be (in other words no higher than that required to ensure that Scottish Water is compliant with the financial ratios);
- ensure that neither current nor future customers are disadvantaged;
- smooth the revenue profile; and
- minimise the impact of rebalancing from household to non-household customers.

Impact on customers' bills

The slow delivery of the capital programme during the 2002-06 regulatory control period has resulted in a lower level of debt than expected. In theory, this could have allowed us to increase the real reduction in prices that customers would receive in this draft determination. However, the capital outputs still have to be delivered and their delivery would have necessitated real increases in price in the later years of the regulatory control period. This would have been inconsistent both with the Ministerial Guidance and with the clear preferences that customers have expressed to us at public meetings.

Table 21.4 compares the revenue caps used for setting charges in this draft determination with the unadjusted modelled answer.

²³³ Our approach to calculating Scottish Water's allowed level of revenue is outlined in greater detail in Volume 7, Chapter 3.

²³⁴ Working capital and Asset disposals adjustments.

Table 21.4: Adjusted and unadjusted revenue caps

	2005-6	2006-07	2007-08	2008-09	2009-10	Comments
Required Revenue Formula	£965.1m	£852.9m (-11.62%)	£900.7m (5.60%)	£947.3m (5.18%)	£1,001.2m (5.90%)	Key performance indicators breached in all years PEL breached in year 4 Large impact on year-on-year prices
Minimum Revenue required to meet cash KPIs in all years	£965.1m	£918.9m (-4.78%)	£913.3m (-0.61%)	£973.0m (6.54%)	£1,036.1m (6.49%)	Key performance indicators compliant PEL not breached Still large impact on year-on-year prices
Draft Determination	£965.1m	£982.7m (1.82%)	£1,005.5m (2.33%)	£1,009.2m (0.36%)	£1,018.2m (0.90%)	Key performance indicators compliant PEL not breached Smooth revenue profile

This assumes that we set charges at the lowest level each year that is consistent within the cash-based ratios.

Cash allowed return sensitivity analysis

We have described the circumstances when we intervene manually either to increase or to decrease the modelled level of revenue required from customers. We have explained that maximum charges have been set at the lowest level that is consistent with stable prices over the regulatory control period and with compliance with the key financial ratios. We could have increased or reduced the amount of revenue that was calculated by the financial model.

This chapter concludes by considering the impact of changes in the factors that influence the cash allowed return on the RCV on the level of prices that we have set in this draft determination.

Allowed rate of return

In Chapter 19 we outlined the response that we received from Scottish Water and Water UK to our proposed method of assessing the allowed rate of return for Scottish Water. Even if we had accepted their argument and had set a higher allowed rate of return, this would not have had an impact on the revenue required from customers that we would have considered necessary. This is because the implication of Scottish Water's arguments would have been to require us to set a lower initial RCV such that Scottish Water would have had enough revenue (as calculated by the model) in 2009-10 to comply with the key financial ratios.

We would have sought to increase or reduce the revenue calculated by the model to the minimum level that is consistent with delivering the objectives set out in the Ministerial Guidance and compliance with the key financial ratios. Our conclusion on the required level of revenue from customers would not have changed, even if we had set a higher rate of return.

If we had set a lower allowed rate of return, this would have increased the initial RCV that we would have set. We explained how we calculated the initial RCV in Chapter 20. Again, this would not have had any impact on this draft determination of prices.

Table 21.5 compares the modelled answer and an adjusted modelled answer if the allowed rate of return had been set at 5.1% real post-tax.

Table 21.5: Adjusted and unadjusted modelled answer with 5.1% real post-tax rate of return

		Revenue			
Return on Equity	RCV	2006-07	2007-08	2008-09	2009-10
0.72% real post tax plus embedded debt adjustment (Draft Determination)	£3.79bn	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
5.1% real post-tax plus with no embedded debt adjustment	£1.85bn	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Variance between scenarios		£0m	£0m	£0m	£0m

Level and mix of investment

The level and mix of investment has a material impact on the level of revenue that Scottish Water requires from customers to comply with the key financial ratios. Table 21.6 illustrates the impact of different assumptions on the level of prices.

Table 21.6: Impact of size, profile and mix of investment programme in customer bills

Total Investment	Profile					
iotai ilivestillelit	Fiolile	2006-07	2007-08	2008-09	2009-10	Avg. annual Increase
	Increasing 460-493-508-540	£969.8m	£974.5m	£979.3m	£984.1m	0.49%
£2.0bn (05-06 prices)	Flat 500-500-500-500	£972.8m	£980.6m	£988.4m	£996.3m	0.80%
	Decreasing 540-508-493-460	£975.7m	£986.4m	£997.3m	£1008.2m	1.10%
£2.3bn (05-06 prices)	Increasing 529-566-584-621	£979.5m	£994.2m	£1009.1m	£1024.3m	1.50%
	Flat 575-575-575	£982.8m	£1000.9m	£1019.3m	£1038.1m	1.84%
	Decreasing 621-584-566-529	£986.2m	£1007.8m	£1029.9m	£1052.4m	2.19%
	Increasing 598-640-660-702	£994.0m	£1023.8m	£1054.5m	£1086.2m	3.00%
£2.6bn (05-06 prices) ²³⁶	Flat 650-650-650-650	£995.5m	£1026.8m	£1059.2m	£1092.5m	3.15%
	Decreasing 702-660-640-598	£996.9m	£1029.8m	£1063.8m	£1098.9m	3.30%

Depreciation and IRC charges

We noted above that the depreciation and infrastructure renewals charges did not affect all of the key financial ratios. If the depreciation and IRC charges had been set at a higher level in 2009-10, we would have set a lower initial RCV since we would not have required the cash allowed return on the RCV to be as large. Correspondingly, a lower depreciation or infrastructure renewals charge in 2009-10 would have led to a higher initial RCV. The adjusted prices would not, however, have been affected by this change.

 $^{^{235}}$ For simplicity, we assumed equal annual increases for each year. 235

 $^{^{\}rm 236}$ Tariffs were affected by the public expenditure limit.

Table 21.7: Impact of depreciation (by changing opening MEAV) on initial RCV

2005-06 opening MEAV	RCV	2006-07	2007-08	2008-09	2009-10
£ 2.49 bn (draft determination)	£3.79bn	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
£ 1.99 bn	£4.49bn	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Variance between scenarios		£0m	£0m	£0m	£0m

Initial RCV

If we had increased the initial RCV, the adjusted answer for the first three years of the regulatory control period would not have changed. However, we would have made a downward adjustment to the modelled answer in the final years of the regulatory control period as the model would have calculated a level of revenue that was greater than necessary to comply with the key financial ratios.

If we had reduced the initial RCV, the adjusted answer for the first three years of the regulatory control period would not have changed. However, we would also have made an upward adjustment to the modelled answer in the final year of the regulatory control period as the model would have calculated a level of revenue that was lower than necessary to comply with the key financial ratios.

This is illustrated in Table 21.8.

Table 21.8: The impact of changing the initial RCV

RCV	Scenario	2006-07	2007-08	2008-09	2009-10
	Unadjusted modelled answer	£903.0m	£967.3m	£1,026.7m	£1,071.4m
£ 5.0 bn	Financiability & phasing adjustment	£79.6m	£38.2m	£(17.5)m	£(53.2)m
	Adjusted modelled answer	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
£ 3.30 bn (Draft Determination)	Unadjusted modelled answer	£852.9m	£916.2m	£974.5m	£1,018.2m
	Financiability & phasing adjustment	£129.7m	£89.3m	£34.7m	£0.0m
ŕ	Adjusted modelled answer	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
	Unadjusted modelled answer	£778.3m	£840.1m	£896.9m	£939.1m
£ 2.0 bn	Financiability & phasing adjustment	£204.4m	£165.4m	£112.3m	£79.2m
	Adjusted modelled answer	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m

Rate of inflation

If we changed our assumptions on the rate of inflation, both the modelled and the adjusted modelled answers would change. A higher rate of inflation will tend to make it easier to comply with cashflow based ratios which involve interest costs. This is because interest costs are fixed and become relatively easier to pay back if inflation is high.

A higher inflation environment would also mean that the actual nominal increase in prices to customers would be higher, even if in real terms they would still be decreasing.

Table 21.9 illustrates the real and nominal impact on prices if the rate of inflation was 10%.

Table 21.9: Real and nominal revenue increase if the rate of inflation was 10%

		2006-07	2007-08	2008-09	2009-10	Year on Year change
Percentage increase with current inflation	Nominal	1.82%	2.33%	0.36%	0.90%	1.35%
assumptions ²³⁷	Real	-0.7%	-0.2%	-2.1%	-1.6%	-1.15%
Percentage increase with inflation at 10% ²³⁸	Nominal	5.37%	5.37%	5.37%	5.37%	5.37%
	Real	-4.63%	-4.63%	-4.63%	-4.63%	-4.63%

Conclusion

The Ministerial Guidance required us to ensure that Scottish Water had sufficient resources to fund the delivery of the "essential" capital programme, irrespective of the impact of this level of capital spending on customers' bills. The guidance also made it clear that, if the essential programme could be delivered without a real increase in customers' bills, the next priority was to establish a regime of stable prices. The guidance explains the Ministers' intentions clearly: there should be no reduction in customers' bills if that reduction required there to be increases in real terms in subsequent years.

The guidance also looks to the longer term by requiring that Scottish Water's financial strength should be at least maintained over the regulatory control period and, if possible, that its financial strength should be improved.

Our financial model calculates the required level of revenue by adding the allowed cash return on the RCV, the allowed level of operating costs, the costs of PPP, depreciation and infrastructure renewals charges, tax and, if appropriate, the change in working capital. We set the modelled level of revenue in order to ensure that we comply with the Ministerial Guidance and with the key financial ratios by which we measure Scottish Water's financial strength. To this end, we have adopted the same financial ratios that Ofwat used in its 2004 price review for the companies south of the border.

The allowed cash return on the RCV covers Scottish Water's costs of financing and managing its investment in assets. In most cases, changes in the factors that influence this element of the process of setting maximum charges would not have an impact on the actual maximum charges that we have set in this draft determination. The exception to this is the size, profile and mix of the capital investment programme.

As a consequence, some apparently important issues (such as the cost of capital and the treatment of embedded debt) which can be contentious south of the border, have not had an impact on the price that customers in Scotland will actually pay. This reflects both our statutory duty to set maximum charges at a level that is consistent with Scottish Water delivering Ministerial objectives at the lowest reasonable overall cost and the ministerial intention to allow Scottish Water continued access to sufficient cheap government borrowing.

Section 5: Capital expenditure

Chapter 22: Monitoring capital delivery

Introduction

Monitoring and reporting on Scottish Water's performance in delivering investment is critical to ensuring that customers receive value for money. In particular, customers and stakeholders need to have confidence that investment will deliver the promised benefits. Monitoring by the economic, water quality and environmental regulators plays an essential part in maintaining this confidence.

In recent years we have established robust monitoring and reporting mechanisms for investment delivery. These include:

- gathering quarterly information on delivery performance;
- the annual collection of detailed information on past performance and future investment plans; and
- providing regular information to customers in our Investment and Asset Management reports.

In the next regulatory control period we expect the new Commission to strengthen further the monitoring and reporting regime. An important element of this will be the existence of a detailed baseline investment programme against which to monitor Scottish Water's capital investment performance. We are also seeking to increase further the involvement of other stakeholders in the monitoring process. We believe that SEPA and the DWQR have a key role in determining delivery of the investment outputs specified in the baseline programme.

Our proposal to channel an element of any out-performance of capital delivery into funding for investment of additional outputs²³⁹ will require a more detailed annual assessment of Scottish Water's efficiency. The selection of investment priorities for any additional funding is a matter for Ministers. This is likely to be one of the responsibilities of the stakeholder group that has been formed by the Scottish Executive to oversee delivery of the Quality and Standards III investment programme.

Our aim is to ensure that the monitoring of capital delivery by Scottish Water will be every bit as rigorous as that which takes place in England and Wales. Scottish Water's quarterly and annual investment returns will be scrutinised by the Reporter so that all stakeholders can have confidence in the information provided.

The existing monitoring framework for capital investment

In the Strategic Review of Charges 2002-06 we set Scottish Water challenging, but achievable, efficiency targets for delivering the Quality and Standards II investment programme. It is important to keep in mind what we mean by 'efficiency'. An efficiency can only be claimed if the required outputs are delivered at lower cost. Efficiency does not mean delivering fewer outputs or delaying delivery into subsequent periods.

To allow us to assess Scottish Water's performance in delivering the outputs specified in Quality and Standards II, we have put in place a robust monitoring framework for capital expenditure. This comprises the following:

Regular information submissions on investment performance

The key investment submissions are the Annual Return and the capital investment return (CIR)²⁴⁰. The Annual Return is the largest single information request that we issue to Scottish Water each year. The format is based closely on Ofwat's June Return and it includes comprehensive information about progress with Scottish Water's investment programme. Submitted quarterly, the CIR provides summary information, at a project level, on financial and physical delivery of the investment programme.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water's capital expenditure. The CIR also highlights any material changes from the planned investment programme. These may be positive (efficiencies or early delivery of projects) or negative (cost overruns or project delays).

²³⁹ This proposal for handling out-performance of capital investment delivery is discussed in Volume 7, Chapters 6 and 7.

²⁴⁰ The content of the Annual Return and CIR is described in more detail in our publication 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1, Chapter 3, page 23.

Independent audit of regulatory information

We appointed a Reporter for the water industry in Scotland in December 2003. The Reporter is required to review all aspects of Scottish Water's information submissions. Our monitoring has benefited from the improvement in the quality of information that is supplied by Scottish Water as a result of this appointment.

Audits of investment appraisal procedures

In the last Strategic Review we highlighted our concerns about the level of scrutiny and challenge given by the three former water authorities to projects as they passed through the planning process. We introduced regular investment appraisal audits. These audits allow us to assess the effectiveness of investment decision making by Scottish Water.

A stakeholder forum

In Chapter 3 we described how we established a stakeholder forum to oversee development of the baseline investment programme for Quality and Standards II. The forum includes representatives from Scottish Water, the Scottish Executive, SEPA, the DWQR and this Office.

This forum developed a 'substitution' process whereby stakeholders can agree to remove projects from the baseline programme and to add new projects.

This monitoring framework allows us to assess Scottish Water's performance in delivering the Quality and Standards II investment programme. We also assess Scottish Water's progress in improving its efficiency relative to that of the companies in England and Wales. To assess the performance of the companies in England and Wales we use:

- the companies' annual June Returns to Ofwat;
- comments on these returns by the independent Reporters, which are published by Ofwat;

- the companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- benchmarking tools²⁴¹.

We publish the results of our analysis of Scottish Water's information returns in our annual Investment and Asset Management Report. We also report on capital expenditure efficiency in our annual Costs and Performance report. We compare performance year-on-year and against the companies in England and Wales. Through these reports, we provide customers and stakeholders with objective assessments of Scottish Water's progress in delivering investment.

Our overall monitoring framework for the Strategic Review of Charges 2006-10

In previous chapters we explained how we assess the levels of investment that are required to deliver the objectives set out by Ministers for the next regulatory control period.

Our current monitoring regime will be improved to take account of the need for stakeholders to scrutinise investment delivery. Specifically, we will take the following steps:

- Increase the involvement of the Reporter in ensuring that Scottish Water's capital investment returns are of a high quality. This will allow all stakeholders to be confident that the information provided in these returns presents an accurate picture of both the current and projected delivery of the capital investment programme.
- Create a rigorous but flexible 'substitution' process. This will allow project outputs to be moved in and out of the programme in a controlled manner, with full stakeholder involvement and a rigorous assessment of value for money. The Reporter will be asked to look at both the cost and the scope of projects that are planned for substitution.

²⁴¹ See Chapter 7.

 Develop a process to assess the annual efficiency of the capital investment programme.

We have worked with stakeholders to develop an appropriate substitution process. This has built on the substitution process that was developed for Quality and Standards II, but has been developed so that there is an appropriate level of scrutiny for each proposed substitution.

The Scottish Executive has established a stakeholder group to monitor the delivery of Quality and Standards III. We would expect this group to be involved in establishing the rules for identifying and incorporating additional outputs in the investment programme. This would include allocating additional outputs to the programme as a result of improved efficiency. We expect to report to this group on our assessment of Scottish Water's capital expenditure efficiency.

It will be especially important that Scottish Water's funding in three areas is agreed with the Capital Monitoring Group before it is committed. These areas are:

- development constraints;
- · addressing malodour; and
- addressing the UIDs in the Portobello, Meadowhead and Stevenston catchments

As outlined in our methodology consultation, we have published the baseline investment programme in full. We have explained that this baseline programme may be subject to change (as a result of the substitution process). Customers should be assured, however, that overall value for money will not be adversely impacted as a result of project substitution. We shall also continue to publish our annual Investment and Asset Management reports.

The substitution process

Any changes in the investment programme must be subject to a high degree of scrutiny by stakeholders. This is important both to customers and other

stakeholders. The way changes are treated needs to be fully transparent and auditable, and should be signed off by stakeholders.

All of the principal stakeholders were involved in detailed development of the investment programme through the Quality and Standards III process. Given that the regulatory control period is four years, we would expect the substitution process to be used only if it becomes clear that there is an output that could contribute more to the achievement of the Ministers' objectives than another similarly valued output that was included in the investment baseline. It is important to emphasise that the substitution process should not become an opportunity for Scottish Water to avoid delivering the more complicated projects.

Although the basic principles have remained the same, we asked the Reporter to build on the substitution process that we used during Quality and Standards II²⁴². The Quality and Standards II process is based on the following elements:

- Monitoring of the process by the stakeholder group, which comprises the Scottish Executive, the DWQR, SEPA, the Water Industry Commissioner and Scottish Water.
- Substitutions within the same broad output category and up to a project value of £1 million cost can be agreed bilaterally between Scottish Water and the appropriate regulator. Other stakeholders are notified of the change.
- Substitutions between broad output categories or with a project value of more than £1 million must be agreed by all stakeholders.
- Substitutions that affect the achievement of Quality and Standards II objectives have to be agreed by Ministers.
- An audit trail back to the baseline programme must be maintained.
- The Water Industry Commissioner is required to approve the substitution costs used for both removals

²⁴² The Quality and Standards II substitution process is described in detail in our publication, 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency' Volume 5, Chapter 7, page 68.

and additions. The Reporter provides an independent assessment of the proposed substitution costs.

The Capital Monitoring Group set up by the Scottish Executive is currently developing the substitution process for Quality and Standards III with assistance from the Reporter. The substitution process will contain a series of detailed rules, covering who can initiate substitutions, for what reasons and the timescale for resolving any proposed substitutions. These rules will also set out the frequency with which agreed substitutions should be subject to audit.

The monitoring regime in England and Wales

In arriving at our proposals for capital monitoring, we have taken account of the approach adopted in England and Wales.

Ofwat focuses its monitoring of investment delivery on specified investment outputs. The required minimum outputs are set out in some detail in the final determinations for each company. The outputs are consistent with Ministers' decisions on water quality and environmental performance standards for the industry.

Delivery of investment outputs is monitored through the use of company 'monitoring plans', the format of which is set out by Ofwat²⁴³. The companies set out their commitments to deliver the required level of drinking water quality and environmental quality outputs and standards of service in their monitoring plans. These plans have to be fully consistent with the price limits set by Ofwat.

Ofwat and the quality regulators review the companies' progress in delivering these outputs. Some outputs will relate to maintaining current performance and others to agreed improvements. Outputs are generally monitored on an annual basis through the June Returns and through the annual reports that the quality regulators provide.

If Ofwat believes that there is a risk to the delivery of some or all of these outputs, it will require the company to produce additional reporting (such as quarterly reports). These reports may be scrutinised by the Reporters. Ofwat's concerns could also lead to requirements for formal undertakings.

Failure to deliver the required minimum outputs would lead to regulatory action. Such action could include compensation payments and/or bill refunds to customers, and prosecution or enforcement proceedings by the quality regulators. Shortfalls are recorded and quantified in cost terms. Ofwat will conduct an interim determination of prices if the costs are material and impact on the price review settlement. If they are not material, the shortfalls would be handled through the logging up/down process before the next price review.

Companies were required to submit their monitoring plan for the 2005-10 regulatory period by 31 March 2005, just before the start of the period. Ofwat expects each company to publish its monitoring plan at the same time as it is submitted.

Ofwat reports annually on its analysis of the information provided by companies. With regard to investment delivery, the key reports provide information on:

- financial performance and expenditure;
- leakage and efficient use of water; and
- levels of service.

These reports comment on delivery of capital investment and provide customers with an analysis of company performance against the targets set at the price review.

Our approach to monitoring the outputs of the investment programme

It is clearly essential that we can assess Scottish Water's progress in delivering the required investment outputs. By 'outputs' we mean measurable benefits such as achieving an agreed standard of water quality, an improvement in environmental performance at a specific location, or a defined improvement in the level of

²⁴³ For the 'AMP4' investment programme covering 2005-10 the requirements are detailed in Ofwat's publication, 'AMP4 monitoring plan for 2005-10: Company strategy for 2005-10 – its commitments on drinking water quality, environmental improvements, services to customers, maintaining serviceability to customers and prices', available on Ofwat's website at www.ofwat.gov.uk

customer service. Our monitoring is designed to ensure that we can form an objective view of progress.

We believe that it is important to monitor the delivery of outputs as well as the level of spending and efficiency. Spending is not an end in itself, and it is important that customers benefit from targeted improvements. It is in customers' interests that we make sure that the full benefits of the investment programme are delivered.

Capital maintenance objectives/outputs

To assess delivery of the capital maintenance objectives set out by Ministers, we will use a combination of project level monitoring and high level output monitoring through 'serviceability measures'. We propose to introduce additional reporting requirements so that stakeholders can develop a better understanding of the serviceability of assets.

Serviceability indicators (for example, the number of water pipe bursts or sewer flooding incidents), describe asset performance in delivering water and sewerage services to customers. For a number of years, Ofwat has used such indicators to assess trends in the overall level of service to customers. It is now able to judge whether the level of capital maintenance expenditure is resulting in stable, improving or deteriorating service to customers.

In Quality and Standards III, and in its first draft business plan, Scottish Water based its capital maintenance expenditure proposals on delivering defined levels of service. The objectives for the investment programme for the period 2006-10 set out by Ministers²⁴⁴ also use serviceability measures to define the required level of performance. The serviceability indicators selected by Ministers, and the baseline position established for each of the indicators, are shown in Table 22.1.

By the end of the period, for almost all of these measures there should be improvements in the serviceability indicators beyond the levels shown in Table 22.1. This is due to investment associated with drinking water quality improvements, environmental performance improvements, growth or customer service

enhancement programmes. It should be remembered, however, that the baseline position represents the minimum acceptable performance in each year of the period and is linked to the delivery of the required levels of capital maintenance investment. Scottish Water will need to ensure that levels of serviceability are at least maintained throughout the period.

We will collect information on these serviceability indicators to monitor delivery of the capital maintenance element of the investment programme. This information will also allow us to gain a picture of the long-term effectiveness of Scottish Water's capital maintenance expenditure.

We have also made extra capital maintenance available in order that Scottish Water can comply with best practice in its implementation of the UKWIR common framework. We will ask the Reporter to comment separately on Scottish Water's progress in this area.

Table 22.1: Capital maintenance serviceability indicators 2006-14

Serviceability indicators	Scottish Water baseline			
Water serviceability indicator				
% compliant zones for iron	83			
% compliant zones for manganese	94			
No of microbiological (total coliform) failures at water treatment works	90			
Number of properties on the low pressure register	12,957			
Properties with unplanned interruptions to supply > 12 hours	16,184			
Number of bursts per 1,000km of mains	204			
Wastewater serviceability indicator				
Number of properties at risk of internal flooding	1,603			
Number of properties internally flooded due to other causes	366			
Number of failing wastewater treatment works (capital maintenance)	45			
Number of unsatisfactory intermittent discharges	867			
Number of pollution incidents	555			
Management & general				
Fleet, scientific, property, IT, telemetry	Maintain to standards to be secured by Quality & Standards II.			
Health & safety compliance	Secure compliance with all existing and known new legislation.			
Asset data	Enhance Scottish Water's data to a sufficient level to support the operation of the common framework approach and other aspects of the investment programme.			

²⁴⁴ These measures are set out in the Scottish Executive's policy statement, 'Investing in water Services 2006-14', which is available at www.scotland.gov.uk/Topics/Environment/Water/17583/Investment.

Capital enhancement objectives/outputs

For capital enhancement work, such as delivering improved water quality or environmental performance, we will monitor expenditure and delivery of the detailed list of projects in the baseline capital investment programme²⁴⁵.

The baseline programme will contain information about each capital enhancement project, including timescales, costs and the expected outcome in terms of environmental benefit, water quality improvement or customer service enhancement. This will allow us to monitor in detail the levels of expenditure and the progress of projects against the baseline schedule of delivery. This will allow us to provide customers and other stakeholders with objective information on the physical delivery of these projects.

We are less well placed to monitor delivery of the water quality and environmental performance improvements that should result from this investment. The DWQR is responsible for monitoring compliance with the agreed improvements in drinking water quality. SEPA has a comprehensive monitoring regime that allows it to determine whether improved standards for discharges and bathing water quality have been met. We will rely on the quality regulators to confirm actual delivery of the required output. We are also keen to work with SEPA and DWQR to monitor progress in delivery of the investment programme. This could allow the quality regulators to take earlier action if they are worried about progress in delivery of key outputs.

We will share our analysis with the Scottish Executive and the quality regulators on a regular basis at the stakeholder monitoring group. This group will:

- review progress in delivering the investment plan;
- oversee the substitution of projects in and out of the programme;
- oversee the measurement of efficiency; and
- agree the additional outputs that are to be provided as a result of any outperformance.

Summary

In recent years we have established a detailed framework for monitoring capital expenditure. This comprises:

- regular information submissions on investment performance;
- independent audit of regulatory information;
- audits of investment appraisal procedures;
- investment performance reporting; and
- a stakeholder forum.

We propose to develop this framework by:

- reviewing the format for investment reporting in the Annual Return and CIR to ensure that it is consistent with the format of the baseline investment programme;
- providing further independent assessment of the regulatory submissions by the Reporter;
- consulting with stakeholders on a mechanism for allowing projects to be substituted within the baseline programme;
- introducing a serviceability monitoring regime which is similar to that used by Ofwat; and
- working with other stakeholders to ensure detailed monitoring of both investment performance and output delivery.

We will continue to publish reports on Scottish Water's progress, particularly with regard to performance against the minimum acceptable levels of performance set in the Strategic Review of Charges 2006-10. These reports will provide customers with a clear understanding of Scottish Water's performance in delivering water and wastewater services.

²⁴⁵ This baseline programme is described in detail in our publication, 'Our work in regulating the Scottish water industry: The scope for capital investment efficiency', Volume 5, Chapter 9 and Appendix 1.

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The Strategic Review of Charges 2006-10: The draft determination

Setting an appropriate level of operating costs



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Executive summary

Introduction

In this volume we outline our analysis of the maximum total operating costs that we have allowed for in setting Scottish Water's maximum charges in the draft determination. This maximum total allowed for operating cost includes both 'base' operating costs (those costs required to deliver the current level of service) and 'new' operating costs (those costs that reflect improvements in customer service, public health compliance and environmental performance beyond that assumed in our benchmarking). The resulting profile of operating costs is compared with the experience of the water and sewerage companies south of the border.

The allowed for operating costs have been reduced to reflect the scope for improvement in efficiency. It is important to emphasise that by 'efficiency' we mean delivering the same level of service for less money. Efficiencies, by definition, cannot result in lower levels of service.

It now appears likely that Scottish Water will achieve the target that we set at the last Strategic Review of reducing operating costs to £265 million by the end of the current regulatory control period in March 2006. This will represent a reduction of some £145 million in real terms over four years. This improvement in Scottish Water's efficiency is to be greatly welcomed.

Background to our assessment of the scope for operating cost efficiency

Operating expenditure comprises day-to-day running costs, as opposed to capital investment or financing costs. Operating expenditure therefore includes employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as an operating cost. Operating expenditure does not include depreciation or capital maintenance costs. It does include normal 'reactive' maintenance costs.

The Annual Return¹ from Scottish Water allows us to analyse operating costs by both function and activity.

This information submission defines functions and activities in the same way as the equivalent Return which the companies in England and Wales submit to Ofwat. The analysis of expenditure by function provides information about how much it costs to provide a particular service. The analysis by activity shows the cost of each activity comprising a service.

In order to make reliable like-for-like comparisons, we need to understand the factors that can influence the level of costs incurred by the water and waste water companies in the UK. These can typically be divided into those that are broadly controllable by management ('internal' factors) and those that can be outside the control of management ('external' factors).

It is possible to identify a number of external factors that can affect the costs of the water and waste water industry. They might include:

- the difficulty of the operating environment (eg population density, topography, types of water source, etc.);
- customer mix;
- customer requirements (issuing bills, etc.);
- environmental requirements (eg sewage effluent standards);
- volumes (water consumption, peak use, sewage loads);
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

The Annual Return is an annual information submission that we receive from Scottish Water. It contains information about all aspects of Scottish Water's business and is the most comprehensive information submission that we collect. The Return is described in more detail in Volume 1, Chapter 3 of our methodology document 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10'.

Factors that are within the control of management would include:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding the purchasing and stocks of materials and consumables; and
- improvements in productivity.

Our assessment of efficiency also considers the service that is actually provided. Water and waste water undertakers in the UK have to provide a minimum standard of service that is expected by stakeholders. This would include:

- treating drinking water to the minimum standard required by legislation; and
- removing and disposing of effluent in compliance with the minimum standards required by legislation.

An efficient water and waste water undertaker will carry out the minimum activities necessary to provide the service that customers expect.

We monitor Scottish Water's progress in improving its efficiency. We take account both of costs and of the level of service that is provided to customers. If Scottish Water were to cut costs but at the same time lower the level of service to customers, then we would not regard this as an efficiency. In our view, Scottish Water must at least maintain service to customers at the same time as cutting costs. This view of efficiency is consistent with the approach taken by other UK utility regulators.

Approach to setting allowed for operating costs in the Strategic Review of Charges 2006-10

We have set targets for this draft determination in terms of the total operating expenditure allowed for (excluding depreciation). We have set the total allowed for operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory control period and to meet all of the 'essential' and 'desirable' objectives of the Scottish Ministers. Figure 1 summarises how we have calculated the allowed for level of operating costs.

Figure 1: The calculation of the allowed for level of operating costs

Total allowed for operating expenditure

=
Baseline operating expenditure²

±
Assessed changes in baseline operating expenditure

Efficiencies in baseline operating expenditure³

+
New operating expenditure⁴

Efficiencies on new operating expenditure

+
Public Private Partnership (PPP) operating expenditure

+
The impact of annual inflation on all of these components

We will review baseline operating expenditure, new operating costs and the scope for efficiency in turn.

Establishing a baseline for operating costs

The baseline level of operating costs is the expenditure incurred in the base year for this draft determination. We assess the scope for efficiency savings, and monitor performance against the baseline.

For each regulatory control period we need to identify one base year. We then monitor performance in each year of the regulatory control period against the level of service delivered in that base year. We have decided to use 2003-04 as the base year for this draft determination. This should make our monitoring more transparent and it should better reflect Scottish Water's current operating environment since it uses the most up-to-date operating costs available.

We have used information from Scottish Water's regulatory accounts for 2003-04 and the Annual Return 2004 to calculate the level of baseline operating costs in 2003-04.

See Chapter 6 for more detail on the calculation of baseline operating costs and any necessary adjustments.

³ See Chapters 8, 9 and 10 for more detail on the calculation of the efficiency gap.

See Chapter 7 for more detail on new operating costs.

To establish the level of baseline operating costs for 2003-04 we:

- take reported core costs;
- adjust for atypical costs (or savings);
- · remove exceptional costs; and
- ensure that cost allocation practices are consistent with those in England and Wales.

The baseline expenditure calculations are illustrated in Table 1.

Table 1: Calculation of base operating expenditure 2003-04

Water operating expenditure Less:	PPP costs Exceptionals	£m £198.4m £0.0m £31.7m
		£166.7m
Sewerage operating expenditure Less:	PPP costs Exceptionals	£262.4m £111.5m £21.2m
		£129.8m
Atypicals Capitalisation adjustments		0 0
Base operating expenditure		£296.5m

This adjusted total operating expenditure forms the baseline for this draft determination. We expect that the new Commission will update our analysis of baseline expenditure to 2004-05 in the final determination.

Our baseline for operating costs has also taken account of potential changes in costs during the regulatory control period. We take account of any such potential changes that can be outside the control of management and not reflected in consumer price inflation. Examples of such changes include:

- non-domestic rates;
- pension costs; and
- · energy costs.

We have analysed these factors carefully to ensure that Scottish Water has sufficient resources to deliver an appropriate level of service. In its second draft business plan, Scottish Water claimed that it faced a number of unavoidable increases in operating costs, as shown in Table 2.

Table 2: Unavoidable operating cost increases claimed in Scottish Water's second draft business plan (2003-04 prices)

	Claimed costs				
Factor:	2006-07	2007-08	2008-09	2009-10	
Non-domestic rates	£4.2m	£5.7m	£7.3m	£7.3m	
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m	
Energy costs	£2.4m	£2.4m	£2.4m	£2.4m	
Bad debt	£4.5m	£10.8m	£19.5m	£30.2m	
Retail business operating costs	£2.5m	£3.4m	£8.6m	£8.7m	
Other costs eg the landfill tax	£1.6m	£1.9m	£2.2m	£2.5m	
SEPA	£4.6m	£4.6m	£4.6m	£4.6m	
Total	£24.9m	£33.8m	£49.6m	£60.8m	

We have analysed Scottish Water's claims carefully. We have allowed for the additional baseline operating costs included in Table 3.

Table 3: Allowed for additions to base operating cost 2006-10

Combined service					
	Allowed for costs (2003-04 prices):				
Factor:	2006-07	2007-08	2008-09	2009-10	
Non-domestic rates	£3.8m	£5.2m	£6.7m	£6.7m	
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m	
Energy costs	£1.0m	£1.0m	£1.0m	£1.0m	
Bad debt	£0.0m	£0.0m	£0.0m	£0.0m	
Retail business operating costs	£0.0m	£0.0m	£0.0m	£0.0m	
Other costs eg the landfill tax	£0.0m	£0.0m	£0.0m	£0.0m	
SEPA	£0.0m	£0.0m	£0.0m	£0.0m	
Reporter	£0.3m	£0.3m	£0.3m	£0.3m	
Total	£10.2m	£11.6m	£13.1m	£13.1m	

Table 4 summarises the baseline that we have established.

Table 4: Summary of the operating cost baseline 2006-10

	2006-07	2007-08	2008-09	2009-10
Base operating costs (water)	£166.7m	£166.7m	£166.7m	£166.7m
Increase in operating costs – water	£7.5m	£8.9m	£10.4m	£10.4m
Base operating costs – waste water	£129.7m	£129.7m	£129.7m	£129.7m
Increase in operating costs – waste water	£2.8m	£2.8m	£2.8m	£2.8m
Total base operating costs	£306.7m	£308.1m	£309.6m	£309.6m

New operating costs

During the 2006-10 regulatory control period, Scottish Water will incur new operating expenditure to deliver improvements in:

- environmental compliance;
- drinking water compliance;
- levels of service to customers; and
- the supply/demand balance.

We are interested specifically in the net new operating expenditure. Net new operating expenditure is best illustrated with an example.

New legislation requires a water and waste water undertaker to achieve higher standards of effluent discharge. A waste water treatment works is already in place, but the treatment processes employed will not meet the new required standards so the plant needs to be replaced. Currently, the works incurs £50,000 a year in operating expenditure. The new compliant treatment processes will incur £75,000 a year in operating expenditure. The new operating expenditure is the difference between the post-investment level of operating expenditure and the pre-investment level (ie £75,000 less £50,000). Net new operating expenditure is therefore £25,000 per year.

New operating expenditure can place an upward pressure on customers' bills. It is therefore important that Scottish Water provides a clear justification for any new operating costs that it expects to incur, and that any claims for new operating expenditure undergo careful scrutiny. Customers should not be expected to pay for unnecessary or inefficient levels of new operating expenditure.

In its second draft business plan, Scottish Water submitted a total claim for new operating expenditure of £37 million by 2009-10, before efficiencies. This is set out in Table 5.

Table 5: Scottish Water's claimed new operating expenditure (pre-efficiency) 2006-10

	2006-07	2007-08	2008-09	2009-10
Water	£0.9m	£4.2m	£6.3m	£28.1m
Waste water	£1.9m	£3.3m	£5.1m	£9.1m
Total	£2.8m	£7.5m	£11.4m	£37.2m

We have assessed Scottish Water's claim in detail. Our analysis has shown that there are several reasons why less new operating expenditure should be allowed for. One of the most significant of these is that the companies in England and Wales in 2003-04 were already delivering enhanced water quality standards and, as such, this cost is already included in our benchmarking of relative efficiency. Moreover, our review of the capital programme has suggested that many of the proposed solutions are over-scoped and were likely to incur higher operating costs than necessary.

Our analysis has also indicated that Scottish Water should incur lower new operating costs for waste water. This reflects our investment review and an analysis of the expected completion dates of projects.

We have concluded that we should allow for annual new operating expenditure of £12.2 million (in 2003-04 prices) by 2009-10. This is detailed in Table 6.

Table 6: Allowed for level of new operating expenditure (pre-efficiency) 2006-10⁵

	2006-07	2007-08	2008-09	2009-10
Water	£0.2m	£0.6m	£1.4m	£6.9m
Waste water	£0.9m	£2.3m	£3.3m	£5.4m
Total	£1.1m	£3.0m	£4.7m	£12.2m

⁵ Totals may not add exactly due to rounding.

Establishing the operating cost efficiency gap – the Ofwat models

We used the Ofwat econometric models to compare Scottish Water's performance against that of the companies in England and Wales.

Ofwat uses a top-down approach to benchmarking the English and Welsh companies and setting efficiency targets. It employs econometric modelling, a method that uses regression analysis to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics.

Ofwat and Professor Mark Stewart of the University of Warwick developed these econometric models in the early 1990s. In January 2005, Ofwat⁶ published the models that it used for its 2004 final determination. The models are broadly similar to those published by Ofwat in January 1999.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company.

The models take different forms and are summarised in Table 7.

Table 7: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Criticisms of the models

As part of its first draft business plan, Scottish Water submitted a number of papers by academics and consultants criticising the Ofwat econometric models. The majority of the papers submitted by Scottish Water were written for the water and sewerage companies in England and Wales or Water UK, the industry trade body. These papers were submitted to Ofwat, two of them at the 1999 price review⁷ and the remainder in the run up to the 2004 price review. Only one paper specifically addresses the use of econometric models in Scotland.

The criticisms that we consider are relevant to our analysis of Scottish Water's relative efficiency are as follows:

- The choice of explanatory factors and type of model.
- The use of ordinary least squares (OLS) regression, as opposed to other methods of assessing relative efficiency.
- The assumption that the residual represents inefficiency only and that this can then be used to set efficiency targets for the water and sewerage companies.
- The application of models to Scottish Water that were derived using information from the companies south of the border.

We address each of the criticisms in turn.

The most common criticism of the models is that they do not accurately reflect the true cost drivers in the water and sewerage industry. Ofwat has consulted with the companies south of the border and has tested alternative models. Ofwat provided information to the companies on these alternatives, but concluded that any improvement in the explanatory power of the model was insufficient to justify a move away from the original model.

A number of commentators have criticised Ofwat's use of OLS regression to assess relative efficiency. Ofwat

⁶ A revised suite of models was originally published in January 2004, but these were subsequently revised in light of the companies' June 2004 submissions.

Davidson 'Ofwat Efficiency Assessments Using Econometric Models: A comment', 1999 and Montgomery Watson 'Water distribution cost drivers', 1999.

commissioned Europe Economics to consider alternatives to the OLS approach. Europe Economics used data envelopment analysis and stochastic frontier analysis. Ofwat noted that although the results of the alternative approaches were different in a number of respects, the overall picture was similar and in most cases there was a high degree of correlation between the results of all three methods⁸.

The third key criticism of the models is that the residual from the econometric analysis should not be interpreted wholly as representing efficiency. In a report for Water UK⁹, Professor John Cubbin breaks the residual down between six factors: omitted variables, poor proxy, sampling error, measurement error, mathematical form and efficiency. The author carried out his analysis for each of the nine operating expenditure models and the nine capital maintenance expenditure models. He concluded that for the operating expenditure models, efficiency accounts for around 40% of the residual on the water service and around 50% of the residual on the sewerage service.

Ofwat reviewed the paper and concluded that uncertainties of this scale are unlikely under normal operating circumstances¹⁰. Several elements of the approach should allay Scottish Water's concerns regarding the results of the econometric models. We have followed Ofwat's lead in recognising the potential for errors in information and have adjusted the residuals downwards to reduce the impact of these errors. We have adjusted the water service residual by 10% and the sewerage service residual by 20%. We also take into account company-specific factors, which may reduce a company's residual by a significant amount.

Professor Cubbin has examined each of the Ofwat models in detail and set out reasons why he thinks the models are less suitable for application to Scottish Water. These reasons appear to relate to differences between the operating environment in Scotland and in England and Wales. Table 8 sets out the operational factors which he believes have an impact on each of the models.

Table 8: Issues raised by Professor Cubbin regarding the use of Ofwat's econometric models to calculate Scottish Water's relative efficiency

Model	Issues
Water distribution	Rurality: travel costs, electricity, number of service reservoirs
Water resources and treatment	Sources; size of treatment plant; raw water quality
Water power	Electricity distribution costs; non-pumping costs
Water business activities	Cryptosporidium testing; bad debt
Sewer network	Lateral sewers; possibly age and condition of assets
Large sewage treatment works	Possibly electricity costs
Small sewage treatment works	Very small works; deep rural effect; possibly septic tanks effect
Sludge treatment and disposal	Sparsity; specialised sludge treatment works
Sewerage business activities	Bad debt

Almost all of these potential problems were included as special factors in Scottish Water's submission.

Scottish Water's efficiency

We set out the results of our analysis of Scottish Water's efficiency in 2003-04 in Table 9. We present our results for the water and sewerage services separately.

The econometric models generate a series of efficiency scores (the residuals in the statistical analysis). We compare these residuals in order to establish the relative efficiency of Scottish Water and the companies south of the border.

We adjust the efficiency scores such that the average score in England and Wales is 100. These results do not take into account residual adjustments, any special factors or differences in the level of service provided to customers.

Table 9: Scottish Water's efficiency scores 2003-04

	Efficiency score	
Water service	112	
Sewerage service	130	

⁸ Ofwat, 'Water and sewerage service unit costs and relative efficiency: 2001-02 report', December 2002.

Professor John Cubbin, 'Assessing Ofwat's efficiency econometrics', March 2004.

¹⁰ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

The efficiency gap is calculated as follows: using the average water service as an example, Scottish Water's efficiency score is 112 and that of the average is 100. The gap is calculated as ((112-100)/112)*100.

The benchmark company for the water service in England and Wales was Wessex Water. For the sewerage service, the benchmark company was Yorkshire Water.

Table 10 shows that the efficiency gap between Scottish Water and the benchmark companies is around 30%.

Table 10: Scottish Water's efficiency gaps

	Efficiency gap
Average – water service	11%
Wessex – water service	30%
Yorkshire – water service	26%
Average – sewerage service	23%
Wessex – sewerage service ¹¹	39%
Yorkshire – sewerage service	34%
Average – combined	16%
Wessex – combined	34%
Yorkshire – combined	29%

We have applied the Ofwat residual adjustments in assessing Scottish Water's relative efficiency. Table 11 shows that even after the adjustments to the residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is around 25%.

Table 11: Scottish Water's efficiency gaps after adjustments of the residuals

	Efficiency gap
Average – water service	10%
Wessex – water service	28%
Yorkshire – water service	23%
Average – sewerage service	19%
Wessex – sewerage service	33%
Yorkshire – sewerage service	29%
Average – combined	14%
Wessex – combined	30%
Yorkshire – combined	26%

Establishing the operating cost efficiency gap – the modified Ofwat models

We repeated our econometric analysis using recalculated versions of Ofwat's models. We have reworked the Ofwat models to include information from Scottish Water in 2003-04. We excluded information about the costs, customers served and asset bases of Scottish Water's PPP contracts. We recognise that Scottish Water cannot control the operating costs at PPP works.

The results of our analysis are shown in Table 12. This table also includes the results of our original analysis using the Ofwat models. We show Scottish Water's relative efficiency in the water service and sewerage service separately.

Table 12: Results of our relative efficiency modelling

	Efficiency score – Ofwat models	Efficiency score – extended models
Water service	112	112
Sewerage service	130	127

Scottish Water's level of efficiency appears slightly better when we use the modified models. Table 13 shows the efficiency gap between Scottish Water and the average in England and Wales and between Scottish Water and the two benchmark companies. Table 13 also includes the results of our analysis using the unadjusted models. Table 13 shows that the efficiency gap between Scottish Water and the benchmark companies is still around 30%, even when we use the modified models.

¹¹ The reason that there is a larger efficiency gap to Wessex than Yorkshire on the sewerage service is that at this stage in our analysis, we have not taken into account either special factors or pension adjustments.

Table 13: Scottish Water's efficiency gaps

	Efficiency gap – Ofwat models	Efficiency gap – extended models
Average – water service	11%	11%
Wessex – water service	30%	30%
Yorkshire – water service	26%	26%
Average – sewerage service	23%	21%
Wessex – sewerage service	39%	38%
Yorkshire – sewerage service	34%	33%
Average – combined	16%	15%
Wessex – combined	34%	33%
Yorkshire – combined	29%	29%

Table 14 shows that, even after the adjustments to residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is around 25% to 30%.

Table 14: Scottish Water's efficiency gaps after residual adjustments

	Efficiency gap – Ofwat models	Efficiency gap – extended models
Average – water service	10%	10%
Wessex – water service	28%	27%
Yorkshire – water service	23%	23%
Average – sewerage service	19%	18%
Wessex – sewerage service	33%	32%
Yorkshire – sewerage service	29%	28%
Average – combined	14%	13%
Wessex – combined	30%	29%
Yorkshire – combined	26%	25%

Establishing the operating cost efficiency gap – our alternative model

In line with the approach of the Competition Commission, we have developed an additional model to assess the scope for efficiency using a different approach¹².

We originally developed the alternative model as part of the Strategic Review of Charges 2002-06. Our alternative model represents a useful check on the results of the econometric modelling.

In preparation for this draft determination we reviewed both the cost drivers included in, and the structure of, the model. We developed two versions; one which used information from the ten water and sewerage companies in England and Wales; and a second, which also includes management information from Scottish Water.

We have used both versions of the alternative model to assess Scottish Water's relative efficiency. Both versions use a fundamentally different approach to Ofwat's econometric models.

The results of our analysis are set out in Table 15. This table includes the results of our analysis for both versions of the alternative model. It includes the results for the water and sewerage services separately.

Table 15: Scottish Water – analysis of performance using the alternative model

	Efficiency score – England & Wales based alternative model	Efficiency score – alternative model including Scottish Water
Water service	110	115
Sewerage service	130	129

The results of this analysis suggest that the absolute performance of Scottish Water appears to be slightly worse when we use the alternative model, although the difference is not significant. However, our analysis focuses on Scottish Water's efficiency relative to the companies in England and Wales. Table 16 shows the efficiency gap between Scottish Water, the average in England and Wales and the two benchmark companies – Wessex Water on the water service and Yorkshire Water on the sewerage service¹³. Table 16 also shows the results of our analysis using the revised Ofwat econometric models¹⁴.

¹² The Competition Commission's consideration of the price limits for Mid Kent Water and Sutton & East Surrey Water in 2000.

Ofwat identified Wessex Water and Yorkshire Water as its chosen benchmark companies in its 'Water and sewerage service unit costs and relative efficiency 2003-2004 report'.

The results of the econometric models include adjustments to residuals, described in Chapter 8.

Table 16: Scottish Water's efficiency gap

	Efficiency gap – revised Ofwat econometric models	Efficiency gap – alternative model including Scottish Water
Average – water service	10%	13%
Wessex – water service	27%	39%
Yorkshire – water service	23%	24%
Average – sewerage service	18%	22%
Wessex – sewerage service	32%	39%
Yorkshire – sewerage service	28%	40%
Average – combined	13%	17%
Wessex – combined	29%	39%
Yorkshire – combined	25%	31%

The results set out in Table 16 show that Scottish Water's relative performance appears to be worse for both the water service and the sewerage service when we assess its performance using the alternative model. The difference is smaller when we look at the relative performance for both water and sewerage together.

Adjustments to our models for special factors

Our approach to benchmarking is top down. It looks at the overall level of costs that Scottish Water incurs and compares this with the costs incurred by the companies south of the border. The approach recognises that costs are influenced by the conditions in which a company operates. It measures the impact of factors that are outside the control of managers on the level of costs incurred.

It is not possible to include every factor that may have an impact on companies' costs. Even if we could identify every factor that influences a company's costs, such an approach would be impractical. The models would become too complex and many of the factors are likely to add little to our understanding.

We are keen that our analysis is as complete as possible and compares like with like. It is important, therefore, that we identify any special factors that affect Scottish Water's operating costs (either causing them to be higher or lower) that are not captured by our models. We asked Scottish Water to draw such factors to our attention.

In assessing special factors for Scottish Water we used the same approach as Ofwat uses for the companies in England and Wales. Scottish Water had to provide evidence in the following areas in order to justify a special factor¹⁵.

- What is the justification of the special circumstances that demonstrate a material difference from industry norms? Scottish Water has to have explained how the special factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- 2. What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs over and above that which would be incurred without these factors?
- 3. What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- 4. Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?

Scottish Water provided us with three submissions which claim that special factors result in higher operating costs than those predicted by our econometric models. The three submissions are:

- Scottish Water special factors submission accompanying the Annual Return, June 2004;
- special factors submitted with Scottish Water's first draft business plan, October 2004; and
- special factors submitted with the second draft business plan, April 2005.

¹⁵ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998, available at: www.ofwat.gov.uk.

Annual Return June 2004

Scottish Water provided its initial evidence on special factors in its Annual Return of June 2004. Scottish Water argued that the following special factors caused it to incur a higher level of operating expenditure than could be justified by our benchmarking.

Geographical

- Travel costs: Due to the size of Scottish Water's service area, employees working on the assets have to travel long distances. In addition, personnel from areas such as customer service and business, laboratory and contract services also have to travel extensively.
- High number of small treatment works: According
 to Scottish Water, the sparsity of the population
 requires it to operate a large number of treatment
 works in comparison with the companies south of the
 border.
- 'Flashy'¹⁶ supplies: Scottish Water claimed that many of its treatment works deal with supplies that are difficult to treat due to the changeable nature of the raw water.
- Electricity: Scottish Water claimed that in some regions its operating costs are increased due to higher charges (distribution use of system charges and the tariff itself) than those incurred by the companies in England and Wales. It also claims that the use of electricity for activities other than pumping is higher in Scotland than in England and Wales and that this is not taken into account in the models.
- Sludge treatment costs: Scottish Water indicated that it had to transport sludge greater distances than is the norm in England and Wales (from small rural areas to dedicated sludge treatment centres).

Asset base

 Leakage: Scottish Water argued that it has inherited an asset base with a leakage rate that is much higher than in England and Wales. It asserts that this has an impact on costs (due to the need to treat relatively more water per inhabitant) which the model does not take into account.

Economic

- Household bad debt, billing and metering:
 Scottish Water argued that it has a higher level of customer bad debt than that of the companies in England and Wales. It suggests that this is largely due to factors that are outside its control.
- Purchase of materials: Scottish Water claimed that there is an additional cost when purchasing materials because most of these are purchased in England and transportation costs are significant.

Legal

- Sewer laterals: Scottish Water has a legal responsibility for lateral sewers (the drains that connect customers' properties to the main sewer). In England and Wales these are the responsibility of the customer.
- Freedom of Information Act: Scottish Water argued that it has to comply with the Freedom of Information Act, whereas the privatised water and sewerage companies do not.
- Queries from politicians: Scottish Water argued that as a public body it receives a larger number of enquiries from politicians than the companies in England and Wales so incurs additional costs in this area.
- Removal of phosphorus and nitrates: Scottish
 Water indicated that it has to incur higher costs to
 remove phosphorus and nitrates from sewage
 effluent than the companies south of the border. This
 is due to tighter consent conditions imposed by the
 Scottish Environment Protection Agency (SEPA).
- Cryptosporidium standards: Scottish Water argued that the sampling requirement for cryptosporidium imposed by the Drinking Water Quality Regulator

^{16 &#}x27;Flashy' conditions are where a greater than or equal to a four-fold change in colour in a 12-hour period can occur.

(DWQR) is greater than the sampling programmes undertaken by the water and sewerage companies. This leads to additional costs.

First draft business plan (October 2004)

Scottish Water provided a 'First draft special factors submission' with its first draft business plan. This set out a revised view of the special factors that might apply to Scottish Water.

It repeated many of the special factors suggested in June 2004. In some cases it provided additional evidence to support particular special factors. Scottish Water also identified some new special factors and withdrew others that it now considered to be immaterial. The new factors were as follows:

- Central regulatory laboratory: Scottish Water argued that the cost of its central regulatory laboratory is an additional operating cost that is not allowed for in the benchmarking models. This reflects the fact that in England and Wales the capital costs would be included within the current cost depreciation charge. In Scotland, the long-term financing arrangements for the laboratory mean that the cost is included within operating costs.
- Service reservoirs and water towers: Scottish
 Water argued that it has proportionately far more
 service reservoirs and water towers than the average
 for companies in England and Wales. It argued that
 this reflects the sparse population distribution,
 Scotland's topography and the assets it inherited
 from the former water authorities.
- Waterworks sludge disposal: Scottish Water argued that it faces an additional cost due to the need to dispose of waterworks sludge to landfill rather than farmland. Scottish Water explained that it is not exempt from the Waste Management Licensing Regulations, unlike the companies in England and Wales.

In its first draft business plan, Scottish Water explained that it had undertaken further analysis and now

considered that the following factors were not sufficiently material to be considered:

- the additional costs associated with the high number of small treatment works;
- the additional costs associated with sludge treatment; and
- · the costs of removing phosphorus and nitrates.

Second draft business plan (April 2005)

Scottish Water further revised and developed its claim for special factors in its second draft business plan. There were no changes to the operating expenditure special factors. Scottish Water did propose two new special factors that affected its level of capital maintenance expenditure. These special factors related to water resources and treatment, and service reservoirs.

Scottish Water's assessment (in 2003-04 prices) of the impact of special factors on its benchmarked annual operating expenditure changed only marginally between the first and second draft business plans. This is shown in Table 17.

Table 17: The annual financial impact of special factors (2003-04 prices)¹⁷

Special factor	October 2004 submission	April 2005 submission
OPERATING EXPENDITURE	•	•
Inherited asset base		
Leakage	£7.8m	£9.8m
Central regulatory laboratory	£0.7m	£0.7m
Geography and environment		
Travel costs	£16.8m	£11.4m
Service reservoirs and water towers	£1.9m	£2.1m
Electricity	£4.6m	£4.7m
Supply of materials to rural locations	£0.5m	£0.5m
Bad debt	£7.8m	£7.3m
Legal	,	
Sewer laterals	£10.0m	£11.7m
Waterworks sludge disposal	£2.3m	£2.3m
Political queries	£0.3m	£0.3m
Cryptosporidium	£1.7m	£2.0m
Operating expenditure total	£54.4m	£52.7m
CAPITAL MAINTENANCE EXPENDITURE		
Water resources and treatment	-	£17.4m
Service reservoirs	-	£1.0m
Capital maintenance total	•	£18.4m
TOTAL	£54.4m	£71.1m

Scottish Water has claimed that there are 11 special factors which increase its operating costs and which are not taken into account by the econometric models. It has also claimed that there are two special factors that increase its capital maintenance costs. We reviewed each of these special factors in detail.

Our response to claims of special factors

We found that some of the claims for special factors are either not material or are not outside managerial control. However, we have accepted some of the special factors that Scottish Water identified and have made appropriate adjustments to our benchmarking.

We have found no evidence to support the claim for an adjustment to benchmarked capital maintenance costs. In the case of operating expenditure, benchmarked costs have been adjusted by £17.4 million per annum in 2003-04 prices. Our response is detailed in Table 18.

Table 18: Summary of our response to special factors

Special factor	Our response	Allowance made
OPERATING EXPENDITURE		
Inherited asset base		
Leakage	No allowance	
Central regulatory laboratory	Re-categorisation of central regulatory laboratory costs	£0.7m
Geography and environment		
Travel costs (including supply of materials to rural locations)	Partial allowance	£6.5m
Service reservoirs and water towers	No allowance	
Electricity	Partial allowance	£2.0m
Bad debt	Partial allowance	£2.6m
Legal	•	
Sewer laterals	Partial allowance	£3.9m
Waterworks sludge disposal	Partial allowance	£0.9m
Political queries	No allowance	
Cryptosporidium	No allowance	
Other		
Public septic tanks	Partial allowance	£0.8m
Operating expenditure total allowance		
CAPITAL MAINTENANCE EXPENDITUR	RE	
Water resources and treatment	No allowance	
Service reservoirs	No allowance	
Capital maintenance total allowance		
TOTAL ALLOWANCE		£17.4m

This includes a small allowance for public septic tanks that was not requested by Scottish Water.

Adjustments for differences in the scope of activities

We now have much better information about Scottish Water's activities and about the quality of service it provides. In this draft determination we have taken account of both of these in assessing the scope for improvement in Scottish Water's efficiency.

In England and Wales the companies provide a broadly equivalent level of service to their customers. The scope of activity each company provides is also comparable. In general, therefore, Ofwat does not have to adjust the result of its models to reflect any differences in the scope of activities or the level of service between companies.

¹⁷ Totals may not add exactly due to rounding.

In Scotland, by contrast, the scope of activities and the levels of service provided to customers are different from that provided in England and Wales. Such differences matter to customers, impacting not only on the service they receive, but also on the charges they pay.

The scope of Scottish Water's activities is in large part a function of the history of the water and waste water industry in Scotland.

Activities where the scope of activity in Scotland is greater

- Scottish Water is responsible for lateral sewers (sewer pipes connecting properties to main sewers).
 In England and Wales most lateral sewers are the responsibility of customers.
- Scottish Water is responsible for public septic tanks.
 These are common in Scotland but rare in England and Wales.

Activities where the scope of activities in Scotland is smaller

- Around one-quarter of all households in England and Wales are metered, compared with only around 0.03% in Scotland, thus adding to the cost of support activities such as meter reading.
- Sophisticated water treatment processes to remove agricultural nitrate and pesticide pollution are much more commonly required in England and Wales than in Scotland.
- Companies in England and Wales have to maintain leakage at specified, economic levels. There are currently no leakage targets in Scotland.
- Companies in England and Wales have a legal duty to promote the efficient use of water by customers, whereas there is no such duty in Scotland.
- Reporters are used in Scotland and in England and Wales to scrutinise the regulatory returns. In Scotland the Scottish Executive pays for the Reporter. In England and Wales the companies meet these costs.

There are other differences that affect the scope of activities, such as major differences in population density and topography. However, we believe that our benchmarking analysis takes account of most, if not all, of these differences.

We have used Yorkshire Water as a comparator company for both water and waste water. We reduce Yorkshire Water's operating costs to reflect its implied level of costs if it engaged in the same scope of activities as Scottish Water. This widens the efficiency gap, and suggests that there is greater scope for efficiency¹⁸.

Our analysis of differences in the scope of activities enables us to draw more accurate conclusions about Scottish Water's relative performance. In Tables 19 and 20 we summarise the adjustments we have made to reflect differences in scope.

Table 19: Summary of adjustments to the allowed for operating expenditure for differences in the scope of activities for the water service¹⁹

Water activity	Effect on Scottish Water's allowed for operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Leakage	Decrease	£6.8m
Nitrate removal	Decrease	£1.6m
Legal duty to promote efficient water use	None	Immaterial
Reporter costs	Decrease	£0.15m
Total	Decrease	£10.8m

Table 20: Summary of adjustments to the allowed for operating expenditure for differences in the scope of activities for the waste water service²⁰

Waste water activity	Effect on Scottish Water's allowed for operating costs	Value of adjustment to Yorkshire Water's operating costs		
Household metering	Decrease	£1.9m		
Non-household metering	Decrease	£0.3m		
Reporter costs	Decrease	£0.15m		
Total	Decrease	£2.3m		

The adjustments represent approximately 11.3% of Yorkshire Water's modelled water operating cost. This

We have also examined the impact on Wessex Water – the other leading comparator company. The impact on both Wessex Water and Yorkshire Water is very similar.

Totals may not add exactly due to rounding.

²⁰ Totals may not add exactly due to rounding.

has the effect on the efficiency gap as shown in Table 21. In our base year, 2003-04, these adjustments resulted in an efficiency gap of 32% for the water service and 24% for the waste water service.

Table 21: Adjusted modelled answers

	Water ²¹	Waste water ²²
Initial gap	27%	28%
Gap after special factors	25%	23%
Gap after scope	32%	24%

The level of service provided by Scottish Water

It is essential that Scottish Water does not seek to live within its charge cap by reducing the level of service it provides to customers. We have therefore set milestones for improvements in customer service.

We plan to use benchmarking to monitor the level of customer service provided by Scottish Water. We can use the overall performance assessment (OPA) framework developed by Ofwat, and information from the companies south of the border, to monitor both Scottish Water's absolute and relative performance. We have not adjusted our calculation of the scope for efficiency to reflect the difference in levels of service.

We had intended to make similar adjustments to Scottish Water's operating costs to reflect the difference in the level of service provided. Unfortunately, Scottish Water did not provide the necessary information that we had requested in our business plan guidance.

As a result we have set milestones for improvement in the OPA.

The OPA depends on each company's performance in each of 15 individual performance measures. We can also compare performance for each individual measure.

We have included as many of the measures that are used by Ofwat as possible in our assessment of the OPA score for Scottish Water. Table 22 sets out the measures that we have included.

Table 22: Components of the OPA assessment

OPA component	Included or not	Basis and comparability
Inadequate pressure	Included	Actual performance, equivalent measure
Supply interruptions	Included	Actual performance, equivalent measure
Hosepipe restrictions	Included	Assumed performance
Drinking water quality	Included	Actual performance, some difference in definition of measure
Sewer flooding (overloaded sewers)	Included	Actual performance, equivalent measure
Sewer flooding (other causes)	Included	Actual performance, equivalent measure
Sewer flooding (at risk)	Included	Actual performance, equivalent measure
Company contact (3 out of 4 measures)	Included	Actual performance, equivalent measure
Assessed customer service	Not included	
Sewage treatment works compliance	Included	Actual performance, equivalent measure
Category 1 & 2 pollution incidents (sewerage)	Not included	
Category 3 pollution incidents (sewerage)	Not included	
Category 1 & 2 pollution incidents (water)	Not included	
Leakage	Included	Assumed performance

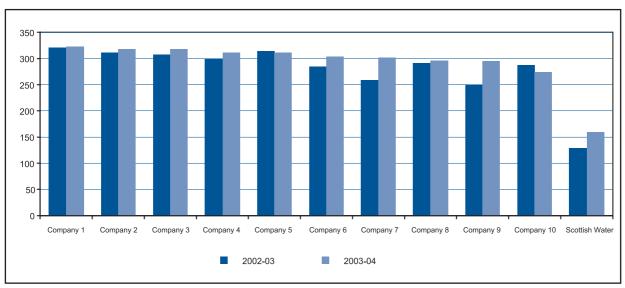
Scottish Water's OPA score for 2003-04 is 159. Figure 2 compares this with the equivalent scores for the water and sewerage companies in England and Wales²³.

²¹ The gap for the water service is with respect to Wessex Water.

²² The gap for the waste water service is with respect to Yorkshire Water.

²³ Adjusted to reflect the parameters, which we are able to measure on an equivalent basis in Scotland.





Scottish Water's overall performance was relatively poor. It scored 58% of the score of the worst performing company in England and Wales and 49% of the best performing company's score.

Scottish Water clearly has considerable room for improvement in the level of service it provides to its customers. We have set charges in this draft determination such that Scottish Water's customers should expect to see improving service during the regulatory control period. Our assumption is that Scottish Water's performance should be broadly equivalent to that of the companies south of the border by the end of this regulatory control period.

We have set milestones to monitor improvements in the level of service provided by Scottish Water each year. These milestones will help us to gauge whether Scottish Water is making good progress in closing the level of service gap. These milestones will also allow us to confirm that efficiency targets are not being met at the expense of customer service.

Table 23 shows the milestones that we expect Scottish Water to achieve.

Table 23: Milestones for the overall performance assessment

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPA	159	159	159	195	232	268	305

Scottish Water's response²⁴ to our second open letter to Ministers²⁵ suggests a misunderstanding of the way that the OPA is calculated. Scottish Water stated: "OPA scores will vary from year to year based on the relative performance with the water companies in England and Wales". In fact, Scottish Water's OPA score will vary only in response to its own customer service performance.

In its response, Scottish Water also suggested that it should be not expected to improve its performance as Ministers had merely required serviceability to be maintained. Such a suggestion overlooks the very significant investment required by Ministers to improve levels of service to customers, remove development constraints and improve public health/environment performance. This investment should result in considerable improvements in Scottish Water's OPA score. We would also emphasise that judicious use of operating costs by Scottish Water could improve its OPA performance quite significantly.

²⁴ Letter dated 2/6/2005, available on our website.

Letter dated 10/5/2005, available on our website.

Required improvement in Scottish Water's performance

It is necessary for us to distinguish between the efficiency gap that exists today and the gap that could exist in the future. In its 2004 price review, Ofwat has set prices that require all of the companies south of the border to improve their absolute level of efficiency. It has also identified that there is scope for well-managed companies to out-perform their regulatory contracts.

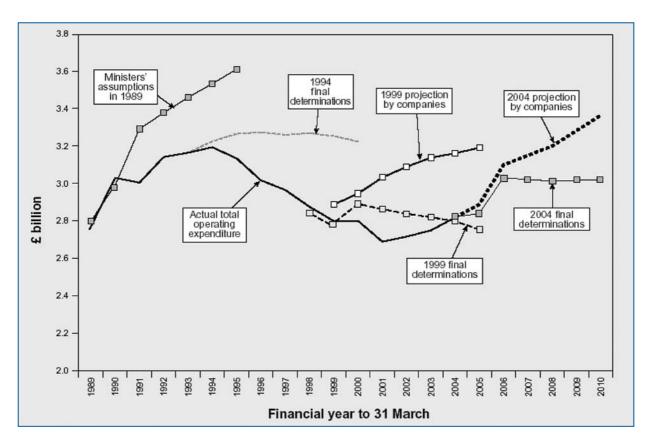
The expectation made by Ofwat when setting prices for the companies south of the border therefore comprises two elements:

- an overall improvement in the efficiency of the industry; and
- a 'catch-up' factor, by which all companies (except of course the leading company) have to narrow the gap to the leading company.

Ofwat set prices that reflected the scope for the industry to improve its efficiency at approximately 0.6% a year for the water service and 1% a year for the sewerage service. It also required companies to narrow 60% of the gap to the frontier company.

The success of the companies south of the border in out-performing their regulatory contracts is illustrated in Figure 3.

Figure 3: Comparison of total operating costs for the water and sewerage industry in England and Wales (2003-04 prices)²⁶

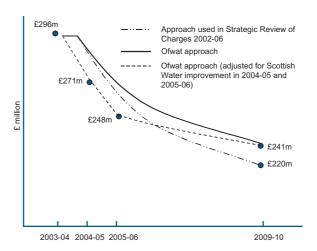


We considered the following four approaches to assessing the scope for Scottish Water to improve:

- retain the approach that we used in the Strategic Review of Charges 2002-06;
- adopt Ofwat's approach using a 2003-04 baseline;
- adopt Ofwat's approach using a 2003-04 baseline, but take account of continuing improvements by Scottish Water in 2004-05 and 2005-06; and
- determine the required pace of improvement that would bring Scottish Water's performance in line with the companies over the period to 2014.

Figure 4 shows the impact of these options on Scottish Water's baseline operating costs.

Figure 4: Scope for improvement in operating costs (in 2003-04 prices)



We decided to adopt the approach that is used by Ofwat, adjusted to take account of the rapid improvement by

²⁶ From Ofwat's 'Water and sewerage service unit costs and relative efficiency 2003-04 report', p10.

Scottish Water that is likely in the last two years of the current regulatory control period. We have accepted Scottish Water's view on its likely improvement over the remainder of this regulatory control period. This assumption affects the level of operating costs that we have allowed for in the earlier years of the regulatory control period. It does not affect the overall closure of the operating cost efficiency gap achieved by 2009-10.

Allowed for level of operating expenditure

The level of operating cost that we have allowed for provides the same scope for Scottish Water to outperform as Ofwat would normally make available to the companies south of the border. We have allowed for the profile of operating expenditure for the 2006-10 regulatory control period outlined in Table 24.

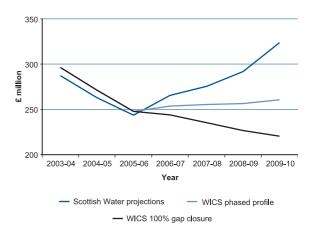
Table 24: Summary of allowed for total operating costs for 2006-10²⁷

		2006-07	2007-08	2008-09	2009-10
	Baseline operating expenditure	£296.5m	£296.5m	£296.5m	£296.5m
Less	Efficiencies in the baseline	£53.0m	£53.8m	£54.7m	£55.6m
Plus	Assessed changes to baseline operating expenditure	£10.2m	£11.6m	£13.1m	£13.1m
Less	Efficiencies in assessed changes to the baseline	£0.9m	£1.4m	£2.1m	£2.6m
Plus	New operating expenditure	£1.1m	£3.0m	£4.7m	£12.2m
Less	Efficiencies in new operating expenditure	£0.1m	£0.4m	£0.9m	£2.9m
Equals	Sub total operating expenditure	£253.9m	£255.4m	£256.6m	£260.8m
Plus	PPP operating expenditure	£116.0m	£116.0m	£117.9m	£121.3m
Plus	Inflation ²⁸ from 2003-04	£22.6m	£30.6m	£39.0m	£48.2m
Equals	Total allowed operating expenditure	£392.5m	£402.0m	£413.5m	£430.3m

In its second draft business plan, Scottish Water said that it would incur a significant increase in its operating costs. Figure 5 illustrates the difference between its forecast level of operating costs and the level of operating cost that we have allowed for. We also show the scope that we believe Scottish Water has to out-perform. The scope for this out-performance has

been calculated with reference to the expected performance of the benchmark companies.

Figure 5: Comparison between the allowed for operating cost, the scope to out-perform and Scottish Water's projection²⁹ (in 2003-04 prices)



Monitoring performance on operating expenditure

Our role as regulator is to set challenging, achievable levels of performance for Scottish Water which promote customers' interests. It is not for us to direct how this performance should be achieved. This is a matter for the board and management of Scottish Water.

It is our role, however, to monitor progress against the minimum acceptable performance levels that we set, and to verify that service levels to customers do not suffer as a result of management action to reduce costs.

The Strategic Review of Charges 2006-10 is only the start of the regulatory control process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance.

²⁷ Numbers may not add exactly due to rounding.

²⁸ We have assumed annual inflation of 2% between 2003-04 and 2009-10.

We have used Scottish Water's regulatory accounts for 2003-04 to calculate operating expenditure in that year. This figure is higher than that reported by Scottish Water in its business plan submission, which is why our figures for 2003-04 to 2005-06 are higher than Scottish Water's figures.

Section 1: Introduction and background Chapter 1: Introduction

Introduction

Our core function is to promote the interests of customers and prospective customers of Scottish Water's core business. We do this by ensuring that Scottish Water delivers Ministerial objectives for the lowest reasonable overall cost.

In this volume we assess the level of operating cost that Scottish Water should incur in providing the required level of service to customers. Operating costs have a direct impact on the prices that customers pay. These costs include:

- staff costs:
- electricity and other utility costs;
- · local authority rates and other taxes;
- the cost of billing and serving customers (including bad debt); and
- the cost of buying materials, such as chemicals for water treatment.

In this volume we outline our analysis of the maximum total operating costs that we have allowed for in the draft determination. This maximum total allowed for level of operating cost includes both 'base' operating costs (those required to deliver the current level of service) and 'new' operating costs (those costs that reflect improvements in customer service, public health compliance and environmental performance beyond that assumed in our benchmarking). The resulting profile of operating cost is compared to that of the water and sewerage companies south of the border.

We have reduced the allowed for level of total operating costs to reflect the scope for improvement in efficiency. This volume describes in detail how we assessed the scope for efficiency in Scottish Water's operating expenditure. It is important to emphasise that by 'efficiency' we mean delivering the same level of service for less money. Efficiencies, by definition, cannot result in lower levels of service.

In the Strategic Review of Charges 2002-06, we set challenging but achievable efficiency targets for operating costs and capital expenditure. In 2003, we welcomed the solid start made by Scottish Water in improving its operating cost efficiency, but cautioned that more still needed to be done. It now appears likely that Scottish Water will achieve the target of reducing operating costs to £265 million by the end of the current regulatory period in March 2006. This will represent a reduction of some £145 million in real terms over four years. This improvement in Scottish Water's efficiency is to be greatly welcomed.

The improvement in operating cost efficiency is an undoubted success. However, it is also important to note that operating cost inefficiency still costs the average household in Scotland some £23 per year, or around 8% of the annual bill.

We do not believe that customers of Scottish Water should have to pay higher bills because of the relative inefficiency of the water industry in Scotland

Companies in England and Wales have a strong incentive to out-perform the efficiency targets set by Ofwat. This out-performance increases the total return available to their shareholders. The current efficiency gap is therefore likely to grow unless we set an allowed level of operating costs that takes proper account of the scope for improvement. In December 2004, Ofwat published its final determination of prices for the companies south of the border. This draft determination takes account of Ofwat's final determinations.

This volume contains 15 chapters, presented in three sections:

Section 1 contains two chapters and introduces the volume:

- Chapter 1 is this introduction.
- Chapter 2 provides background information on what is included in operating costs and which factors can influence these costs.

Section 2 contains three chapters. It discusses the lessons learned from the Strategic Review of Charges 2002-06:

- Chapter 3 looks at how we established the levels of operating cost for Scottish Water in the Strategic Review of Charges 2002-06.
- Chapter 4 explains the lessons learned from the last Review.
- Chapter 5 describes our monitoring of Scottish Water's performance during the 2002-06 regulatory control period.

Section 3 contains 10 chapters. This section outlines how we set the allowed for level of operating costs for Scottish Water for the 2006-10 regulatory control period.

- Chapter 6 explains how we established a baseline for Scottish Water's operating costs.
- Chapter 7 assesses new operating costs (those not included in our benchmarking) faced by Scottish Water as a result of improvements in customer service, public health compliance and environmental performance.
- Chapter 8 explains how we have used Ofwat's modelling techniques to assess the operating cost efficiency gap between Scottish Water and the companies in England and Wales.
- Chapter 9 compares the results obtained using a version of the Ofwat models that have been modified to include information from Scottish Water.
- Chapter 10 presents the results of our alternative model for assessing the appropriate level of Scottish Water's operating costs.
- Chapter 11 explains the adjustments we have made to the models to take account of identified special factors that have an impact on Scottish Water's operating costs.

- Chapter 12 outlines how we have taken account of differences in the scope of activities carried out by Scottish Water and the companies south of the border.
- Chapter 13 describes adjustments we have made to take account of differences in the levels of service provided in Scotland and south of the border.
- Chapter 14 explains how we have assessed the scope for improvement in Scottish Water's performance.
- Finally, Chapter 15 summarises our analysis of the scope for efficiency and sets out the operating costs that we have allowed for Scottish Water.

Section 1: Introduction and background Chapter 2: Background to operating expenditure

Introduction

This chapter begins by outlining how we define operating costs. We then explain the factors that influence operating costs. We distinguish between external factors – which managers may not be able to control – and internal factors. The chapter goes on to explain the increased operating costs that can result from investment to meet new standards of service.

It is important that we set a level of operating expenditure that is sufficient, but no more than sufficient, for Scottish Water to provide customers with an acceptable standard of service. This ensures that operating expenditure is efficiently incurred.

The chapter summarises our approach to setting the level of operating costs that we have allowed for in this draft determination. This includes our assessment of the scope for improved efficiency in operating cost. Our assessment takes full account of the special factors that we believe have an impact on costs in Scotland.

Finally, we review trends in operating costs south of the border, reflecting on the profile of both base and total operating costs. It is clear that performance on operating costs for the water industry as a whole in England and Wales has improved significantly since 1990.

What is operating expenditure?

Operating expenditure comprises day-to-day running costs, as opposed to capital investment or financing costs. Operating expenditure therefore includes employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as an operating cost.

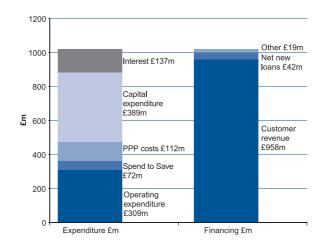
Our definition of operating expenditure is narrower than that which is employed in the statutory accounts of a limited company. We exclude the following items from our analysis of operating expenditure:

 Replacement of the asset base – such expenditure is classed as capital maintenance and is regarded as investment.

- Depreciation this is an accounting charge reflecting the use of non-infrastructure (above-ground) assets.
 The amount of this charge depends on the application of accounting policies. It does not necessarily reflect the organisation's spending on replacing non-infrastructure assets.
- Infrastructure renewals charge this is an accounting charge reflecting the use of infrastructure (below-ground) assets. As with depreciation, the size of this charge depends on the application of accounting policies. It does not necessarily reflect the organisation's spending on maintaining infrastructure assets.
- Costs of Public Private Partnership (PPP) schemes
 such costs are determined by contracts between
 Scottish Water and external parties. They comprise both day-to-day running costs and financing costs.

Operating expenditure currently accounts for some 30% of revenue. Figure 2.1 shows that in 2003-04, Scottish Water's operating expenditure was £309 million. This equates to £131 per connected property.

Figure 2.1: Scottish Water expenditure and funding 2003-04



We collect information about the operating costs incurred by the water and waste water service undertakers in the UK.

How we treat operating expenditure in the Strategic Review of Charges 2006-10

The Annual Return³⁰ from Scottish Water allows us to analyse operating costs by both function and activity. This Return defines functions and activities in the same way as the equivalent return which the companies in England and Wales submit to Ofwat. The analysis of expenditure by function provides information about how much it costs to provide a particular service. The analysis by activity shows the cost of each activity comprising a service.

The breakdown by function is shown below:

- Water service:
 - · Water resources and treatment
 - Water distribution
 - Business activities.
- Sewerage service:
 - Sewer network
 - Sewage treatment
 - Sludge treatment and disposal
 - Business activities.

The breakdown by activity is as follows:

- Direct costs:
 - Employment
 - Power
 - Hired/contracted services
 - Agencies
 - Materials and consumables
 - Charges levied by environment regulator
 - · Bulk water imports
 - Other.
- General and support
- Business expenditure:
 - · Customer services
 - Scientific services
 - Local authority rates

- Doubtful debts
- Exceptional items
- · Third party services
- Other.

Underlying operating expenditure

In order to ensure that our comparisons are objective and fair, we exclude one-off items of expenditure that can affect reported operating expenditure. Examples of such one-off items would include:

- the costs of abnormal pension contributions;
- redundancy payments;
- rates rebates; and
- unusual weather conditions.

Base service operating expenditure

The baseline level of operating expenditure is the expenditure incurred in the base year for this Strategic Review, 2003-04. We have applied future efficiency targets to this baseline. We have used the following process to set the baseline level of operating costs in this draft determination:

- We used the 2003-04 regulatory accounts and Annual Return information to establish the total level of Scottish Water's operating expenditure in that year.
- We identified exceptional and atypical costs and subtracted them from total operating expenditure.
 This allowed us to establish the normal ongoing costs of running the business.
- Finally, we assessed whether there was anything unusual about Scottish Water's cost allocation in 2003-04. We compared Scottish Water's cost allocation practices with those of the companies in England and Wales to make sure that they are consistent. This allowed us to establish whether any adjustments to Scottish Water's operating expenditure

The Annual Return is an annual information submission that we receive from Scottish Water. It contains information about all aspects of Scottish Water's business and is the most comprehensive information submission that we collect. The Return is described in more detail in Volume 1, Chapter 3 of our methodology document 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10'.

were necessary in order to be sure that our comparisons are fair.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in:

- environmental standards;
- drinking water standards;
- · levels of service to customers; and
- the supply/demand balance.

These new operating costs are added to the baseline (to the extent that they are not included in our benchmarking).

We used the same criteria to assess the level of new operating costs as we used in the Strategic Review of Charges 2002-06. These are as follows:

- Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?
- Is Scottish Water required to provide this additional level of service, and for what reason?
- Has Scottish Water carried out a proper assessment of the proposed new operating expenditure, rather than relying on estimates from contractors/manufacturers or on an arbitrary percentage of the capital cost?
- Has Scottish Water demonstrated management challenge and control over the proposed costs?
- Has Scottish Water compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?
- Do the alternative options include different mixes of operating expenditure and capital investment?

 Has Scottish Water quantified potential savings to baseline operating expenditure arising from upgrading works or systems, and offset the new operating expenditure accordingly?

Like-for-like comparison

In order to make reliable like-for-like comparisons we need to understand the factors that can influence the level of costs incurred by the water and waste water companies in the UK. These can typically be divided into those that are broadly controllable by management ('internal' factors) and those that are outside the control of management ('external' factors).

It is possible to identify a number of external factors that can affect the costs of the water and waste water industry. They might include the following:

- difficulty of operating environment (eg population density, topography, types of water source, etc.);
- customer mix;
- customer requirements (eg issuing bills, etc.);
- environmental requirements (eg sewage effluent standards);
- volumes (water consumption, peak use, sewage loads):
- nature of the assets operated and maintained in the short to medium term (size, mix, performance);
- regional variations in charges for local authority rates, water abstraction and sewage discharges;
- regional variations in services such as mains diversions and sewer diversions (eg 'third party' services); and
- regional variations in market rates for salaries, electricity or other costs.

We can also identify a number of factors that are within the control of management. They include the following:

- the organisation's remuneration policy;
- the organisation's policy regarding the use of permanent or temporary employees;
- the organisation's policy regarding the purchasing and stocks of materials and consumables;
- the organisation's policy regarding hired and contracted services, for example the use of lawyers and consultants;
- improvements in productivity; and
- in the long term, the nature of the assets operated and maintained (size, mix, performance) – over time, water and waste water service providers can change the assets that they own and operate, either by building new ones, decommissioning old ones or making changes to existing assets to modify the way in which they operate.

We consider that external cost drivers can be outside significant management control in the short term, for an efficiently run business. However, poor management can mean that charges incurred for local authority rates or electricity, for example, are higher than they need to be, or that insufficient attention is paid by managers to limiting the impact on costs of their operating environment.

Our comparisons with other water and waste water companies take full account of how external factors have influenced the actual level of operating expenditure for Scottish Water. The models that we have used are described in more detail in Chapters 8, 9 and 10.

What do we mean by 'efficiency'?

Cutting the costs of providing a service is often confused with efficiency. However, an assessment of efficiency should also consider the service that is actually provided. Water and waste water undertakers in the UK

have to provide a minimum standard of customer service that is expected by stakeholders. This would include:

- treating drinking water to the minimum standard required by legislation; and
- removing and disposing of effluent in compliance with the minimum standards required by legislation.

An efficient water and waste water undertaker will carry out the minimum activities necessary to provide the service that is expected, at the lowest cost.

An organisation could be perceived as inefficient for one of two reasons:

- Case A the organisation carries out more activities than are necessary in order to provide the expected standard of service. Even if the organisation is generally low cost, this would tend to increase the cost of providing the service. Even if these extra activities raised the standard of service above that which stakeholders expect, we would still consider this to be inefficient.
- Case B the organisation carries out the minimum activities that are necessary in order to provide the expected standard of service, but at a high cost.

In Case A, the organisation has chosen to provide a higher standard of service than is actually expected. Customers should not be expected to pay for the costs of providing this high standard of service, unless they have previously indicated a willingness to pay for it.

In Case B, the organisation provides the minimum expected standard of service, but at a relatively high cost. Once again, customers should not be expected to pay more as a result of their undertaker's inefficiency.

We monitor Scottish Water's progress towards achieving efficiency. We take account both of costs and of the level of service that is provided to customers. If Scottish Water were to cut costs but at the same time lower the level of service to customers, then we would not regard this as an efficiency. In our view, Scottish Water must at

least maintain service to customers at the same time as cutting costs. This view of efficiency is consistent with the approach taken by other UK utility regulators.

In our second draft business plan guidance we asked Scottish Water to identify any new operating costs that it felt it needed to improve the level of service to customers. Such additional operating costs should be tied to a measurable improvement in customer service performance. Scottish Water did not provide the information that we requested.

Establishing the scope for efficiency

Our process for establishing the scope to improve efficiency involves the following stages:

- Assessing the size of the efficiency gap The
 efficiency gap refers to the difference between
 Scottish Water's actual reported operating costs and
 the costs reported by similar comparator companies
 for providing a similar level of service.
- Assessing the future efficiency gap The
 efficiency of comparator companies continues to
 improve. We take account of the way in which the
 performance of companies south of border is likely
 to change over the next regulatory control period.
 Otherwise customers in Scotland would have had to
 pay more than is necessary.
- Determining a rate of improvement We used historical evidence from the English and Welsh companies about the rate of improvement they have achieved in order to determine how quickly Scottish Water should close the efficiency gap.
- Calculating the total allowable operating expenditure – In this draft determination, we have established a minimum acceptable level of performance in operating expenditure. We have set the maximum allowed for operating expenditure (not including depreciation) at a level that we believe is sufficient for Scottish Water to meet the objectives of Ministers in each year of the regulatory control period.

Operating costs in the water industry in England and Wales

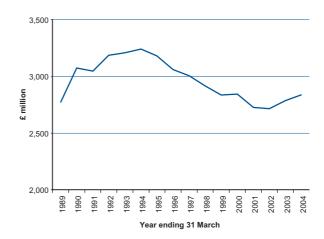
In England and Wales, operating costs have remained broadly unchanged in real terms since privatisation. The companies are, however, operating far more efficiently and delivering a higher level of service through improvements in environmental performance, drinking water quality and customer service.

Trends in operating expenditure

The companies in England and Wales report two operating expenditure figures; one for base service and one for total operating expenditure.

Figure 2.2 details the total operating expenditure for the English and Welsh industry since 1989.

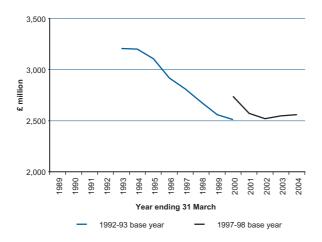
Figure 2.2: Total operating expenditure in the English and Welsh water industry 1989-2004 (in 2003-04 prices)



In Figure 2.3, we demonstrate the relative efficiency gains in adjusted base operating costs that the industry in England and Wales has made since 1989. Ofwat has conducted three price reviews since the privatisation of the industry. The first was in 1994, where 1992-93 was used as a base year for operating expenditure. The second was in 1999, where 1997-98 was used as a base year for operating expenditure. Ofwat's most recent price review was carried out in 2004 for the regulatory period 2005-10. Operating expenditure for 2004 onwards is not yet available.

Figure 2.3 shows the operating expenditure for the English and Welsh industry using 1992-93 and 1997-98 as base years.

Figure 2.3: Base operating expenditure in the English and Welsh water industry 1993-2004 (in 2003-04 prices)



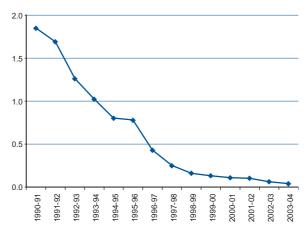
Changes in levels of service

Ofwat collects information on the level of service that the companies deliver to customers. The information collected includes:

- supply measures relating to water supply and the sewerage infrastructure – these measures indicate how reliable the service is, and include aspects such as water pressure, water supply, and sewer flooding; and
- customer service measures.

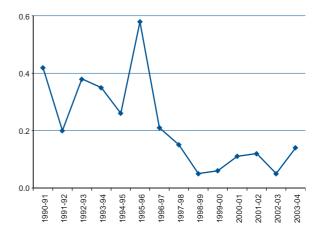
Figures 2.4 to 2.9 detail the total industry performance for both types of measures.

Figure 2.4: Properties at risk of low pressure³¹



The number of properties at risk of low pressure has decreased by 98%. There was a particularly rapid improvement in the early years after privatisation – but there has continued to be a steady improvement since 1998.

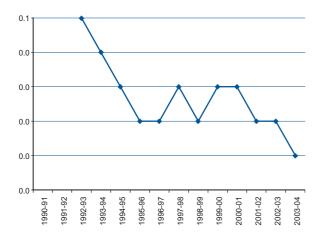
Figure 2.5: Properties subject to unplanned interruptions of 12 hours or more



The number of properties subject to unplanned interruptions of 12 hours or more has declined by 67%. The poor performance in 1995-96 reflects the well-documented drought of that year. Performance has — with the exception of that year — generally improved.

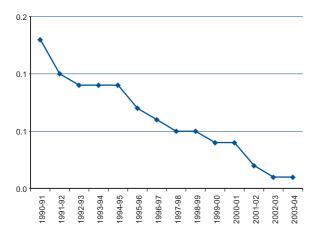
³¹ Based on information from Ofwat's 'Levels of Service Reports' (1997-2004).

Figure 2.6: Properties subject to sewer flooding incidents (overloaded sewers and other causes)



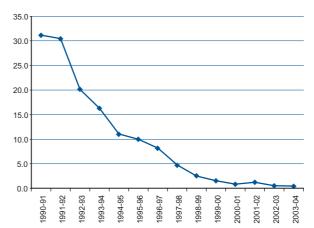
The number of properties subject to sewer flooding incidents has decreased by 80%. Again there has been a consistent improvement over the last 12 years.

Figure 2.7: Properties at risk of sewer flooding incidents (twice in 10 years)



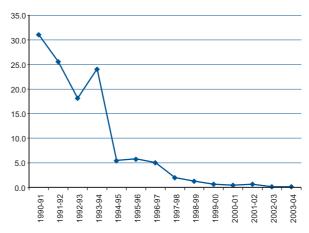
There has been a steady improvement year on year since 1990. The number of properties at risk of sewer flooding incidents (twice in 10 years) has decreased by 92%.

Figure 2.8: Billing contacts not responded to within five working days



Performance in this area improved quickly after privatisation. Since 1999-2000 the level of service has been maintained. The number of billing contacts not responded to within five working days has decreased by 98%.

Figure 2.9: Written complaints not responded to within ten working days



Again there was generally a rapid improvement in the first ten years after privatisation. The level of service has been maintained at this high level since that time. The number of written complaints not responded to within ten working days has decreased by 99%.

This analysis shows that the water industry in England and Wales has improved significantly since 1990. It is important to note that these improvements have been achieved without any real increase in operating costs since 1990.

Summary

Our approach to assessing an appropriate level of operating costs for Scottish Water is fully consistent with that which Ofwat has used successfully in regulating the companies south of the border. The Competition Commission has also reviewed the approach and found it to be robust.

Operating costs represent a substantial proportion of customers' bills and it is therefore important that we scrutinise these costs carefully. Our analysis takes full account of special factors that impact on the level of operating costs faced by Scottish Water. It also takes account of the level of performance that has been achieved south of the border.

We have set a maximum allowed for level of total operating costs so that the challenge faced by Scottish Water is clear to all stakeholders. We will measure total operating costs based on the information contained in the regulatory accounts.

Section 2: Lessons learned from the Strategic Review of Charges 2002-06

Chapter 3: The approach to operating cost efficiency in the Strategic Review of Charges 2002-06

Introduction

This chapter examines how we established the allowed for levels of operating expenditure for the water industry in Scotland in the Strategic Review of Charges 2002-06. We describe the range of modelling techniques that we used to assess the performance of the three former authorities³². These techniques allowed us to compare the performance of the authorities with each other and with the industry in England and Wales.

In 2001 the Scottish Parliament had not yet approved the proposed merger of the three former water authorities to create Scottish Water. The Strategic Review of Charges therefore set operating cost efficiency targets for the three former authorities and for the proposed Scottish Water.

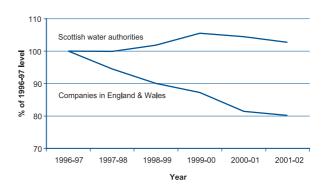
The chapter discusses how we established the scope for savings from the proposed merger. It continues by discussing the important lessons that we have learned. Our analysis concludes with an overview of how we have modified our approach in this Strategic Review to take account of these lessons.

How we set targets at the Strategic Review of Charges 2002-06

The focus of the Strategic Review of Charges 2002-06 was to set revenue caps that were consistent with a sustainable water industry in the public sector. The Quality and Standards II process highlighted that there was a need for increased investment. It was also likely that some of this investment in higher treatment standards would result in higher operating costs. There was therefore a significant upward pressure on the prices faced by customers.

In the Strategic Review of Charges 2002-06, we explained that the need for increased revenue could be markedly reduced by an improvement in the operating cost and capital expenditure efficiency of the Scottish water industry. Figure 3.1 shows that the level of efficiency of the Scottish water industry since 1996-97 had been worsening while that for the industry south of the border had improved.

Figure 3.1: Trends in base operating costs since 1996-97³³



The level of operating costs has a direct impact on customers' bills. If the level of operating costs is higher than it should be, because of inefficiency, this will further increase the charges faced by customers. We therefore set operating expenditure efficiency targets for each of the three authorities and for the proposed Scottish Water.

Establishing a baseline and underlying operating expenditure

We established a baseline level of operating expenditure for the three authorities to which future efficiency targets could be applied. This was based on the 2000-01 statutory accounts and the corresponding June Return information for that year.

The costs associated with interest, depreciation and PPP services were deducted. We also identified and deducted exceptional and atypical costs in order to establish the normal ongoing costs of running the businesses. This allowed us to determine the underlying operating costs for each of the three authorities.

Assessing the level of new operating expenditure required

We wrote to each of the three authorities to ask for their views on the level of new operating expenditure that was likely to be incurred over the period 2002-06³⁴. We allowed

³² North of Scotland Water Authority, East of Scotland Water Authority, West of Scotland Water Authority.

³³ It is important to note that there have been significant improvements to drinking water quality and environmental compliance during the past five years.

years. 94 WIC 12 7 March 2001 PAGE 31

new operating costs that were not already included in our benchmarking. Our analysis of the authorities' claims resulted in an allowance of some £9 million by 2005-06.

To assess the scope for the three authorities to improve their efficiency, we compared the operating costs incurred by the three authorities with those incurred by the English and Welsh companies. However, our comparisons took no account of the quality or scope of the outputs delivered by the companies south of the border. This assumption favoured the three authorities.

We expected the three authorities (or Scottish Water) both to reduce costs and to improve the level of service they provided. Our efficiency target was therefore only quantified partly in money terms. Part of the efficiency gap reflected the difference in the level of service provided to customers.

Calculating relative efficiency

We used three techniques to compare the relative performance of the three authorities. These were:

- adjusted Ofwat econometric models;
- a specially developed alternative model; and
- basic unit cost comparisons.

Ofwat's approach to assessing relative operating efficiency had previously been endorsed by the Competition Commission. We collected information from the three authorities using the same format and definitions as Ofwat. This allowed us to use the Ofwat models to assess the relative efficiency of the three authorities. We also combined the information from the three authorities to assess the overall level of efficiency in the Scottish water industry.

It was important to make sure that the comparisons were on a genuinely like-for-like basis. We therefore considered carefully any geographical, demographic and other differences between Scotland and England and Wales.

The Ofwat econometric models take many of these differences into account. We revised Ofwat's methodology as follows:

- We re-categorised water source types to include lochs, springs and burns. This affected the resources and treatment model.
- We extended Ofwat's banding for small waste water treatment works to include a separate category comprising the many very small works in Scotland.
 We also included higher unit costs for these works in the model.

The Competition Commission recommended that alternative models could have a place in efficiency analysis. We developed an alternative model so that we could check the results of the Ofwat models.

Our alternative model was based on the premise that most operating costs are a function of the assets used, the volumes of water and waste water handled and/or the number of customers served. The model calculates the impact of each of these cost drivers separately for a number of activities. By contrast, the Ofwat models examine the interrelationships between drivers, and focus on the drivers that explain the differences in the observed costs of the companies most effectively. There is no separation of the impact of each cost driver in the Ofwat models. By taking such a different approach to Ofwat, we could be confident that our alternative model provided an effective independent check on the results given by Ofwat's models.

We also used basic comparisons of unit costs to provide a simple, broad picture of relative costs. All of these methods gave very similar results.

Closing the efficiency gap

Our analysis of the relative efficiency of the water industry in Scotland showed that the companies south of the border were some 40% more cost efficient in 2001 (this assessment did not include the difference in quality of service or scope of activities highlighted earlier).

If the comparator companies achieved the efficiency targets set by Ofwat by 2004-05, this efficiency gap would grow to some 48%³⁵. Moreover, given the nature of incentive-based regulation, it was reasonable to expect the English and Welsh companies to outperform Ofwat's targets.

We set efficiency targets to narrow this gap. It was important that any targets were realistic. Our analysis of the progress made by the English and Welsh companies in improving their performance over the last decade showed that the companies reduced their operating expenditure by between 18% and 39%³⁶. In our advice to the Minister on revenue caps, we therefore set a target of a 35% reduction in operating expenditure in real terms. Such a target closed 80% of the efficiency gap between Scottish Water and a comparator company (not the frontier company in England and Wales). This was below the average closure of 85% achieved by the privatised companies over their best five years³⁷.

If we had adopted Ofwat's approach to setting the scope for efficiency in the 2002-06 Review, Scottish Water would have faced a marginally (c5%) easier target. However, the authorities had the advantage of 'spend to save'. This reduced the required closure of the gap to approximately 50%.

Spend to save was an additional £200 million of funds allowed in the authorities' revenue caps. It was intended that these funds would facilitate the improvement in efficiency. The aim was to ensure that Scottish Water would be able to meet all of its restructuring costs without delaying investment or improvements in customer service. In England and Wales the companies have to fund any similar initiatives by outperforming Ofwat's targets.

Lessons learned from the Strategic Review of Charges 2002-06

We believe that there are clear lessons to be learned from the response of stakeholders to the Strategic Review of Charges 2002-06. In particular, issues arose in the following areas:

- The need for a clear definition of the allowed level of operating costs.
- Greater transparency in the process by which comparisons are made.
- The importance of like-for-like comparisons when benchmarking performance with England and Wales.

In this draft determination, we state clearly the operating cost performance that is required. We have set an allowed for level of total operating costs and commented clearly on our expectations of the level of service that should be delivered. We will monitor total allowed for operating costs. We will also use regulatory accounts to ensure that we deal as transparently as possible with any:

- adjustments required to reported operating expenditure to ensure like-for-like comparisons;
- differences in the scope of activities between Scotland and England and Wales; and
- differences in the level of service between Scotland and England and Wales.

We examined these issues in detail in Volume 4 of our methodology consultation.

Summary

Scottish Water appears likely to have improved its relative efficiency markedly over the 2002-06 regulatory control period. This is good news for customers.

We set out to learn from stakeholders' responses to the Strategic Review of Charges 2002-06. In particular, we have:

 reduced the scope for misunderstandings and misinterpretation of the efficiency requirements by setting out a clear definition of the allowed for level of operating expenditure;

³⁵ The comparator companies were Northumbrian Water, South West Water and Yorkshire Water. See 'Strategic Review of Charges 2002-06', pp.186-187.

³⁶ Ibid., pp194-195.

³⁷ Ibid.

- introduced a regulatory accounting framework³⁸ to provide an agreed set of regulatory information which is not subject to changes in accounting policy; and
- included in our benchmarking process an assessment of the impact of differences in the scope of activities and the levels of service between Scottish Water and the English and Welsh companies.

Section 3 of this volume explains our calculation of the total allowed for level of operating costs in detail.

³⁸ Discussed in more detail in Volume 4, Chapter 7 to Chapter 10.

Section 2: Lessons learned from the Strategic Review of Charges 2002-06

Chapter 4: Amended approach to setting allowed for operating costs in the Strategic Review of Charges 2006-10

Introduction

In this chapter we set out the eight-stage process that we have used to set Scottish Water's total allowed level of operating costs. Subsequent chapters describe each stage of the process in more detail, and our draft determination of allowed for operating expenditure is presented in Chapter 15.

We believe that this process has provided a robust and transparent assessment of the minimum acceptable level of operating cost performance that customers can expect Scottish Water to achieve. The greater degree of transparency at this Review will allow customers and other stakeholders to monitor Scottish Water's performance and will, therefore, increase Scottish Water's accountability for delivering the required improvements.

Calculating total allowed for operating expenditure

In this draft determination, we have set the total allowed for level of operating expenditure (excluding depreciation and Infrastructure Renewals Charges (IRC)) at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory control period and meet all the 'essential' and 'desirable' objectives of Scottish Ministers. This level of operating cost will be directly funded through charges to customers. It is calculated as follows:

Total allowable operating expenditure

Baseline operating expenditure³⁹ (step 1)

Assessed changes in baseline operating expenditure⁴⁰ (steps 2)

Efficiencies in baseline operating expenditure⁴⁰ (steps 3, 4 and 5)

New operating expenditure⁴¹ (step 6)

Efficiencies on new operating expenditure (steps 3, 4 and 5)

Public Private Partnership (PPP) operating expenditure (step 7)

+ The impact of annual inflation on all of these components (step 8)

We no longer refer to a monetary value for the total efficiencies required. However, if stakeholders wish to count the total monetary value of the efficiencies required in this regulatory control period in order to compare it with that used in the Strategic Review of Charges 2002-06, they should add:

- · efficiencies in baseline operating expenditure; and
- efficiencies in new operating expenditure for each year and then adjust for annual inflation.

It is important to note that because Scottish Water did not provide information on the operating costs required to improve the level of customer service performance, we have had to set milestones for improvement in customer service. If this information had been provided, we would have increased the scope for efficiency to reflect the significant difference in the level of customer service performance that currently exists.

Detailed process for calculating allowable operating expenditure

We followed the steps outlined below to determine our initial conclusions on the allowed for operating expenditure for Scottish Water. Each step is discussed in more detail in later chapters of this volume.

- Step 1 Establish base operating expenditure (Chapter 6).
- Step 2 Assess whether there are likely to be any changes to base operating expenditure (Chapter 6).
- Step 3 Use reported total operating expenditure in 2003-04 (which we have used as the base year for this draft determination) to assess the extent of the efficiency gap that exists between Scottish Water and the companies in England and Wales (Chapters 8, 9, and 10).
- 39 See Chapter 6 for more detail on the calculation of baseline operating costs and any necessary adjustments.
- See Chapters 8, 9 and 10 for more detail on the calculation of the efficiency gap.
- See Chapter 7 for more detail on new operating costs.

- Step 4 Review the evidence on factors specific to Scotland that we should take into account and which would alter our assessment of the efficiency gap (Chapters 11, 12 and 13). These factors include:
 - differences in levels of service provided to customers with those provided in England and Wales;
 - differences in the scope of activities compared with England and Wales; and
 - factors relating to Scotland's geography.
- Step 5 Given the size of the adjusted efficiency gap, review the evidence on:
 - the scope for improvement in the water and waste water industry in Scotland;
 - the pace of change that Scottish Water could realistically achieve in tackling efficiency savings;
 - the extent of gap closure that could realistically be achieved by Scottish Water in the four years 2006 to 2010; and
 - the scale of targets set by Ofwat for the companies over the period 2005 to 2010 (Chapter 14).
- Step 6 Assess the forecast level of new operating expenditure and the level of efficiency savings that could be applied to such expenditure (Chapter 7).
- Step 7 Assess the forecast level of Public Private Partnership expenditure (Chapters 8 to 11 of Volume 5).
- Step 8 Apply our assumptions of annual inflation to the results of Steps 5, 6 and 7.

This process has allowed us to assess a maximum level of operating expenditure that we believe Scottish Water should require in 2009-10. In completing our analysis we have taken account of responses to our methodology consultation. Most stakeholders considered that Scottish Water should be expected to match the efficiency of the companies south of the border.

Setting separate minimum acceptable levels of performance for different areas of the business

In the Strategic Review of Charges 2002-06, we set efficiency targets for Scottish Water as a whole, i.e. for all water and waste water services, together with its noncore services. This approach was different from that which Ofwat adopts for the companies in England and Wales. Ofwat sets efficiency targets for the core (regulated) business only, and splits the targets into separate targets for the water and waste water services.

There are three main changes that have affected the way we have set the maximum allowed level of operating expenditure in this draft determination. First, our legal remit changed in 2002 to cover only the core activities of Scottish Water – broadly those activities required by statute. Scottish Water's maximum allowed level of operating expenditure does not, therefore, include its 'non-core' activities.

Second, we have sought to make charges more cost reflective than in the past. Customers pay separately for water and waste water services, so it appears sensible to set separate maximum levels for water and waste water operating expenditure⁴². Ofwat also follows this approach.

The Water Services etc. (Scotland) Act 2005 provides for the separation of the wholesale and retail parts of Scottish Water's business. It is therefore necessary to separate minimum acceptable performance levels for the wholesale and retail parts of the business.

Summary

We want to ensure that the performance levels that we set for Scottish Water are clear. We believe that setting a minimum acceptable level of operating expenditure will

⁴² Our monitoring will focus on performance relative to the total (water and waste water) level of operating costs incurred by Scottish Water.

ensure that there is less scope for disagreement about whether the targets have been achieved.

Our eight-step process for establishing Scottish Water's allowable operating costs provides a robust and transparent mechanism which increases Scottish Water's accountability to customers and stakeholders.

In the following chapters we describe each step of the process in more detail. Our draft determination for the maximum allowed level of operating expenditure is set out in Chapter 15.

Section 2: Lessons learned from the Strategic Review of Charges 2002-06

Chapter 5: Monitoring performance on operating expenditure

Introduction

In this chapter, we describe how we will monitor Scottish Water's performance on operating expenditure and on levels of service. We have to monitor performance on both operating expenditure and levels of service to ensure that customers will benefit from improvements in efficiency.

We begin by summarising the information that we will use to monitor operating expenditure over the period 2006 to 2010 and how we will report progress. The chapter closes by outlining how we will monitor levels of service to customers so that we can be sure that Scottish Water does not compromise service delivery in order to achieve the required levels of performance.

Monitoring framework

Our role as regulator is to set challenging, achievable levels of performance for Scottish Water which promote customers' interests. It is not for us to direct how this performance should be achieved. This is a matter for the board and management of Scottish Water.

It is our role, however, to monitor progress against the level of total operating costs that we have allowed for, and to verify that service levels to customers do not suffer as a result of management action to reduce costs.

The Strategic Review of Charges 2006-10 is only the start of the regulatory process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance, through:

- regular information submissions, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- independent audit of regulatory information;
- a process of query, challenge and confirmation of numbers;

- rigorous analysis of current and expected progress against the levels of performance set out in the final determination of charges;
- publishing reports; and
- the application of analytical tools which are designed to ensure that we can monitor real progress as opposed to apparent progress (for example, improvements that come from calculating information for the Annual Return in a different way).

We will also monitor Scottish Water's progress relative to that of the companies in England and Wales. We will continue to use information from the companies south of the border. This information includes:

- their June Returns to Ofwat;
- comments on these returns by independent auditors, which are published by Ofwat;
- · companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- rigorous analysis of relative efficiency using the benchmarking tools described in Chapters 8, 9 and 10.

All stakeholders should have an interest in Scottish Water's progress. We are keen to share the results of our monitoring with stakeholders and to explain progress against the levels of performance that we establish in the final determination. This should help ensure that surprises are kept to a minimum and that Scottish Water stays focussed on delivering improved value for money to customers.

Monitoring operating expenditure

In monitoring Scottish Water's performance in operating expenditure, we are primarily concerned with how much it spends each year relative to the total allowed for operating

costs. We would not be concerned with how Scottish Water spends the money unless there is evidence that the level of service provided to customers is getting worse.

Our monitoring covers the following⁴³:

- total allowed for operating costs;
- year on year progress relative to the total allowed for level of operating costs;
- progress on the capital programme relative to that in the final determination;
- progress on baseline operating costs relative to England and Wales; and
- Public Private Partnership (PPP) operating expenditure.

Our sources of information for monitoring Scottish Water's progress against the required levels of performance and its performance relative to the companies in England and Wales will include the regulatory returns shown in Table 5.1. Much of this framework is already in place and we use it to monitor progress against existing targets. We have also introduced regulatory accounts to enhance the consistency of regulatory reporting year on year.⁴⁴

Table 5.1: Framework for monitoring operating expenditure⁴⁵

Sources of information	Operati	ng expen	Relative performance		
	Baseline	New	PPP	Baseline and new ⁴⁶	
Scottish Water					
Annual Return	V	V	~	V	
Regulatory accounts (from 2005)	V	V	V	~	
Monthly operating expenditure returns	~				
Quarterly investment returns ⁴⁷		V		V	
Independent comments by Scottish Water's Reporter	~	V	~	~	
England and Wales					
Companies' annual returns				~	
Company regulatory accounts				V	
Independent comments by Reporters in England and Wales				~	
Ofwat published annual reports				V	
Reporting progress			Ψ		
	Costs and performance reports				

These sources of information are described in more detail in Volumes 1, 2 and 3 of our methodology consultation, 'Our work in regulating the Scottish Water Industry'.

Monitoring levels of service

We monitor the level of Scottish Water's customer service performance by using the overall performance assessment (OPA) that was developed by Ofwat. As explained earlier, we have had to set targets for improved levels of customer service in this draft determination. We have set these relative to the OPA.

The OPA combines results for customer service measures with other information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service. Indicators include:

⁴³ Chapters 6 and 7 define and explain baseline and new expenditure, respectively. Chapters11-14 of Volume 5 discuss PPP in detail.

⁴⁴ See Volume 4: Framework and Approach, Chapters 8-12.

⁴⁵ The components of operating expenditure are defined in earlier chapters of this volume and are summarised in Chapter 2.

⁴⁶ Comparisons of relative performance exclude PPPs as there is no direct parallel in the water and sewerage industry in England and Wales.

⁴⁷ We use the quarterly investment returns to help monitor new operating expenditure because this expenditure is driven largely by Scottish Water's capital investment.

- water supply pressure, supply interruptions and drinking water quality;
- waste water service sewer flooding incidents and risk of flooding;
- environmental impact sewage treatment works compliance and pollution incidents; and
- customer service speed of handling complaints, billing enquiries and telephone contacts.

We discuss this in more detail in Chapter 13. We also monitor performance against Scottish Water's Guaranteed Minimum Standards (GMS). They are minimum standards of service agreed with us in October 2000 that Scottish Water must meet and which customers have a right to expect. Failure to comply with GMS entitles the customer to financial compensation. The GMS relate to:

- planned and unplanned interruptions;
- internal sewer flooding;
- payment enquiries; and
- complaints.

It is, however, important to note that the Guaranteed Minimum Standards do not cover all aspects of customer service. Our monitoring therefore focuses primarily on the OPA.

Table 5.2 sets out our framework for monitoring levels of service performance.

Table 5.2: Framework for monitoring levels of service performance

Sources of information	Guaranteed Minimum Standards	Overall Performance Assessment	
Scottish Water			
Annual Return	V	V	
Customer Service Performance Return	V	V	
Quality Performance Assessments	V		
Independent comments by Scottish Water's Reporter	V	V	
England and Wales			
Companies' annual returns		~	
Independent comments by Reporters in England and Wales		~	
Reporting progress	•		
	Customer service reports		

We currently use three different information submissions to monitor the service Scottish Water provides to its customers. These are the Annual Return, the Customer Service Performance Return and Quality Performance Assessments.

The Annual Return includes:

- information on the customer base;
- a description of the service delivered to customers (for example: water pressure and sewer flooding events);
- compliance with customer care indicators; and
- compliance with quality and environmental requirements.

This information allows us to assess the level of service to customers and compliance with environmental and drinking water standards. It also allows us to calculate the OPA score.

The Customer Service Performance Return is submitted quarterly and includes:

 the number and nature of complaints, and the speed of response;

- the number of planned and unplanned interruptions to supply;
- the number of sewer flooding incidents; and
- the number of Guaranteed Minimum Payments made.

The Customer Service Performance Return supports the information that is submitted in the Annual Return, and allows us to examine trends and any seasonal variations.

The Quality Performance Assessments are annual audits of the way in which Scottish Water handled complaints. We identify how the complaint was handled using a set of standard criteria including:

- Did the right person at Scottish Water deal with the complaint?
- Did the response address the substance of the complaint?
- · Was the response written in plain English?
- Did the handling of the complaint comply with Scottish Water's Guaranteed Minimum Standards?

We score each complaint in the audit sample based on these criteria in order to make a balanced assessment of Scottish Water's complaints handling procedure.

We will continue to use the first two of these information sources to monitor Scottish Water's levels of service to its customers during 2006-10. We expect that the Water Customer Consultation Panels may begin to audit Scottish Water's handling of complaints.

Summary

We believe that our framework for monitoring Scottish Water's performance is robust. The introduction of regulatory accounts will further strengthen this framework for the Strategic Review of Charges 2006-10. We will continue to publish reports on progress made by

Scottish Water, in order to inform stakeholders and encourage discussion and debate. These reports will pay particular attention to performance relative to the levels of service milestones that we have set.

Section 3: Setting the allowed for level of operating costs

Chapter 6: Establishing a baseline for operating costs

Introduction

This chapter outlines the process by which we have established the baseline level for operating expenditure for Scottish Water for the 2006-10 regulatory control period. In Chapter 4 we set out an eight-stage process by which we set the allowed for level of operating costs for Scottish Water. Setting the baseline for operating costs is stage one.

The baseline level of operating costs is the expenditure incurred in the base year for this draft determination. We assess the scope for efficiency savings, and monitor performance against the baseline.

In this chapter, we set out clearly what is meant by the baseline and the assumptions that underpin it. This should minimise uncertainty when measuring progress towards the level of performance that is required by the determination of charges.

Baseline operating costs reflect the specific level of service that was delivered in the baseline year. The baseline needs to reflect the actual underlying level of operating costs for the core business. We therefore have to make adjustments to take account of exceptional or atypical costs incurred in the base year. We also check that the reported operating costs in the base year do not include non-core operating costs. Any non-core costs must be deducted from the baseline. We have also adjusted the baseline to include any unavoidable costs that we consider Scottish Water may face during the 2006-10 regulatory control period. We asked Scottish Water to identify such costs in its draft business plans.

This chapter begins by explaining our choice of base year for the Strategic Review of Charges 2006-10. We also outline our assessment of the scope for future changes in additional costs which we have included in Scottish Water's baseline operating expenditure. Finally, we provide the baseline figures that we have set for each year of the regulatory control period.

Establishing the base year

For each regulatory control period we need to identify one base year. We then monitor performance in each year of the regulatory control period against the level of service delivered in that base year. It is important, therefore, that the base year is one that is relatively stable.

In the previous Strategic Review of Charges 2002-06 we used 2000-01 as the base year.

In our methodology consultation⁴⁸ we explained that it was not appropriate to use 2002-03 as the base year because this was the first year after the three former water authorities had merged. This left two options for the base year for this draft determination:

- to continue to use the year 2000-01; or
- to use 2003-04 as the base year for the draft determination in June 2005 and 2004-05 as the base year for the final determination.

We explained that continuing to use 2000-01 as the base year had many disadvantages. The Scottish water industry has made significant progress since the last Strategic Review. The three former water authorities have merged to become Scottish Water and Scottish Water has made significant progress in consolidating all aspects of its business (including accounting practices) and reducing costs. In addition, the baseline for 2000-01 included adjustments (such as inter-authority trading between the three authorities) that are no longer required.

The baseline for operating expenditure is likely to be more transparent if adjustments can be kept to a minimum. If Scottish Water did not apply its capitalisation policy consistently, or if its policy was different from that which the companies south of the border use, it would also have been necessary to make an adjustment to the amount of cost capitalised.

⁴⁸ See Volume 4 of our methodology consultation, 'Our work in regulating the Scottish water industry. The scope for operating cost efficiency' Chapter 6, page 61.

The second option uses two separate base years: 2003-04 for this draft determination and 2004-05 for the final determination. We are unable to use 2004-05 as the base year for this draft determination because Annual Return information is not yet available.

Using two base years in this way does make it more complicated to monitor Scottish Water's progress towards its efficiency targets for the remainder of the 2002-06 regulatory control period. Our monitoring of Scottish Water's progress towards its efficiency targets up to March 2006 may require us to make adjustments to ensure that our comparisons are on a like with like basis. Any such adjustments will not impact the baseline for operating expenditure that we have established for the 2006-10 regulatory control period. It is possible, however, that there will be a difference between the level of operating expenditure that we use for monitoring purposes (for the remainder of the 2002-06 regulatory control period) and the baseline operating expenditure for the 2006-10 regulatory control period.

Following our methodology consultation, we have decided to use 2003-04 as the base year for this draft determination. We believe that this should make our monitoring more transparent. It also provides a baseline which better reflects Scottish Water's current operating environment and uses the most up-to-date operating costs available.

Establishing baseline operating expenditure for 2006-10

We have used information from Scottish Water's regulatory accounts for 2003-04 and the June 2004 Return to calculate the level of baseline operating costs in 2003-04. Total reported operating expenditure for water services was £209.7 million. Total reported operating expenditure for waste water services was £152.4 million (excluding PPP costs).

To establish the level of baseline operating costs for 2003-04 we:

take reported core costs;

- adjust for atypical costs (or savings);
- remove exceptional costs; and
- ensure that cost allocation practices are consistent with those in England and Wales.

Reported core costs

The Strategic Review of Charges 2002-06 set operating cost efficiency targets for all of the operating costs incurred by the three former water authorities in 2000-01. The Water Industry (Scotland) Act 2002, however, limits our role to promoting the interests of customers of the core business only. Our assessment of baseline operating costs for 2003-04 therefore includes only core operating costs.

Our regulatory accounting project developed new reporting requirements for Scottish Water that separate core and non-core costs. Scottish Water reported on this basis in May 2005 for the financial year 2003-04. Core operating costs were reported as £198.4 million (water) and £150.9 million (waste water), excluding PPP costs. Non-core operating costs were reported as £11.4 million (water) and £1.5 million (waste water). Non-core operating costs have been excluded from our analysis.

Adjusting for atypical costs (or savings)

We also take account of the impact that any atypical costs have on the baseline level of operating cost. These are costs (or savings) that are one-off in nature, but which are not classed as 'exceptional' under accounting standards. Examples of atypical costs would include costs associated with the Foot and Mouth outbreak or savings resulting from pension holidays. Such atypical costs (or savings) increase (or reduce) the normal ongoing operating costs of an organisation. If we are to ensure that our performance monitoring reflects genuine like-for-like comparisons it is important that we do not include any atypical costs (or savings) in the baseline level of operating cost.

This is fully consistent with the approach that Ofwat takes. It excludes atypical costs (and savings) incurred by the water and waste water companies in England and

Wales. The water and waste water companies are required to identify any such atypical costs (or savings) in their annual information submissions.

In its June 2004 Return, Scottish Water reported no atypical costs for the base year. It amended its view during the clarification and query process that follows the submission of an annual return. It claimed that it had incurred atypical costs of around £1 million as a result of the exceptionally dry summer in 2003. Scottish Water claimed that these additional costs related to a number of factors including increased pumping costs, letter drops to customers and supplying water by tanker.

We accept that Scottish Water may have incurred additional costs in respect of its water services due to the dry summer. However, our analysis shows that it should have made corresponding operating cost savings in its waste water service. Scottish Water did not provide any information about any such atypical savings. These savings would have related primarily to lower pumping costs as a result of having to treat lower volumes of waste water.

We believe that the savings on waste water are likely to have been broadly equivalent to the atypical water operating costs. We have not, therefore, allowed for any atypical costs in the base year.

Removing exceptional costs

In its June 2004 Return, Scottish Water claimed that exceptional costs of £52.8 million had been incurred in 2003-04 (£31.6 million for the water service and £21.2 million for waste water service). Scottish Water explained that these costs related to redundancy packages for staff leaving the organisation. We accepted Scottish Water's explanation of these exceptional costs and deducted them from the base year costs.

Ensuring consistent cost allocation

Accounting practices and policies can affect the way in which operating expenditure is reported in regulatory returns. For example, an increase in the capitalisation of operating costs will reduce reported operating costs but increase investment costs. Any such changes in the way operating costs are reported do not affect the company's actual efficiency. In monitoring performance, we have to ensure that performance is properly measured and reported on a like-for-like basis.

We have examined Scottish Water's regulatory returns and compared the cost allocation procedures with those of the English and Welsh companies. We did not find any differences in cost allocation practices that warranted an adjustment to the base year costs.

Calculating the baseline from the base year costs

The baseline expenditure calculations are illustrated below.

Table 6.1: Calculation of base operating expenditure 2003-04

£166.7m
£262.4m costs £111.5m eptionals £21.2m
£129.8m
£0.0m £0.0m
£296.5m

This adjusted total operating expenditure forms the baseline for this draft determination. We expect that the new Commission will update our analysis of baseline expenditure to 2004-05 in the final determination.

Projections of operating expenditure for 2005-06

In our methodology consultation we discussed a number of possible approaches to estimating 2005-06 costs⁴⁹. We explained that two issues were key in deciding which approach to use.

There is a need for consistency between review periods. Our projections for 2005-06 should ideally be consistent

⁴⁹ See Volume 4 of our methodology consultation, 'Our work in regulating the Scottish water industry. The scope for operating cost efficiency' Chapter 6, page 62.

with the targets set in the Strategic Review of Charges 2002-06.

Consistency has to be balanced by a review of Scottish Water's actual performance during the 2002-06 regulatory control period. We needed to be sure that there was no reason to believe that Scottish Water's actual performance would be materially different from the agreed target.

If Scottish Water falls short of its target it will face a more demanding starting point than we have assumed in this draft determination. In this case, it would be more difficult for Scottish Water to deliver the required level of service within the total allowed for level of operating cost.

Conversely, if Scottish Water beats its 2005-06 target, then it could face a less demanding challenge and customers' bills would be higher than they needed to be.

In the methodology consultation⁵⁰, we outlined the following five options for estimating the 2005-06 operating expenditure.

- Assume a flat level of expenditure in 2004-05 and 2005-06 (in real terms, ie with inflation stripped out of the figures).
- Assume that Scottish Water meets the operating expenditure level for 2005-06 targeted in the Strategic Review of Charges 2002-06.
- Assume that Scottish Water fails to meet the level of operating expenditure for 2005-06 targeted in the Strategic Review of Charges 2002-06.
- 4) Assume that Scottish Water has improved its operating expenditure to a greater extent than we targeted in the Strategic Review of Charges 2002-06. In this case, we would need to consider how this outperformance should be shared with customers. We would also need to make an assumption about the extent of the outperformance.
- 5) Use the expenditure forecasts that Scottish Water includes in its business plan submissions.

One respondent expressed concern about using 2003-04 as the base year to calculate efficiency targets, then applying these efficiency targets to 2005-06 operating costs. He argued that this could overstate the efficiency gap, especially where a company was quickly closing the gap on the frontier company. This is a misunderstanding of how the scope for efficiency is assessed. We identify frontier performance and judge the level of improvement that is required towards that frontier from the baseline by the end of the regulatory control period. Consequently, our method of setting targets benefits a company that is improving its efficiency quickly towards the end of a regulatory control period.

Following our consultation, we decided to use option 5.

Our decision to set a total allowed level of operating expenditure addresses this issue. We have calculated the efficiency gap and the total allowed level of operating expenditure for 2006-10 using reported information for 2003-04. We have also ensured that the profile of operating costs for 2006-10 is reasonable given Scottish Water's forecasts of its expected performance in 2005-06.

Factors influencing the future baseline

Our baseline for operating costs has also taken account of potential changes in costs during the regulatory control period. We take account of any such potential changes that can be outside the control of management and not reflected in consumer price inflation. Examples of such changes include the following.

- Non-domestic rates. The basis on which Scottish Water's assets are valued will change in 2005. The impact of this change is not yet known.
- Pension costs. Many organisations are facing the need for increased pension contributions. This pressure on costs is not confined to Scottish Water, but it could result in an increase in Scottish Water's baseline operating expenditure.
- Energy costs.

⁵⁰ See our methodology consultation Volume 4, Chapter 6, for further details.

We have analysed these factors carefully to ensure that Scottish Water has sufficient resources to deliver an appropriate level of service. We used the following criteria to assess potential changes in underlying costs.

- If the future changes are the result of an economywide factor, will their impact be accounted for in national inflation indices?
- What measures has Scottish Water's management taken to reduce the impact of future increases in baseline operating expenditure?
- Where appropriate, has Scottish Water taken account of external advice in respect of the forecast changes? For example, when we look at pensions costs, we will expect any forecast changes to be supported by an actuarial valuation.
- Are there any offsetting factors that we believe Scottish Water has failed to take into account?
- What views have been expressed by other utility regulators such as Ofwat and Ofgem in assessing similar claims by the companies they regulate?

In its second draft business plan, Scottish Water projected changes in operating costs set out in Table 6.2:

Table 6.2: Operating cost changes from Scottish Water's second draft business plan (2003-04 prices)

	Claimed costs				
Factor:	2006-07	2007-08	2008-09	2009-10	
Non-domestic rates	£4.2m	£5.7m	£7.3m	£7.3m	
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m	
Energy costs	£2.4m	£2.4m	£2.4m	£2.4m	
Bad debt	£4.5m	£10.8m	£19.5m	£30.2m	
Retail business operating costs	£2.5m	£3.4m	£8.6m	£8.7m	
Other costs eg the landfill tax	£1.6m	£1.9m	£2.2m	£2.5m	
SEPA	£4.6m	£4.6m	£4.6m	£4.6m	
Total	£24.9m	£33.8m	£49.6m	£60.8m	

We discuss each of these claims in turn.

Non-domestic rates

The basis on which Scottish Water's assets are valued for the purposes of non-domestic rates changed in April 2005. Scottish Water anticipated that it could face a substantial increase in its non-domestic rates bill. In its second draft business plan, Scottish Water claimed that it would incur additional costs of £4.2 million (in 2003-04 prices) in 2006-07, rising to £7.3 million by 2009-10.

In our analysis we noted that this increase exceeded 12.5% in real terms. Scottish Water is therefore entitled to benefit from transitional arrangements. This means that the increase in rates would be phased in over the period to 2008-09.

We have, therefore, allowed for an adjustment as set out in Table 6.3.

Table 6.3: Non-domestic rates (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Non-domestic rates	£3.8m	£5.2m	£6.7m	£6.7m

This amounts to £22.5 million over the period (in 2003-04 prices).

Pension costs

In its first draft business plan, Scottish Water indicated that it would have to increase its pension contributions. It claimed that this would cost £5.6 million (in 2003-04 prices⁵¹) a year.

In its second draft business plan, Scottish Water changed this estimate to £5.1 million per annum (in 2003-04 prices).

Following analysis of this claim, we have allowed for an adjustment of £5.1 million per annum. Our analysis included obtaining actuarial valuations from Scottish Water to substantiate its claim.

Energy costs

In its first and second draft business plan, Scottish Water claimed that it was likely to face increased energy costs of approximately £2.4 million per annum in 2003-04 prices.

⁵¹ To convert to 2003-04 prices we have used RPI. Note that in Scottish Water's first draft business plan they used CPI as an inflation factor. In their second draft business plan they used RPI. We have used RPI in both cases for consistency when reporting business plan numbers.

We looked at this claim carefully and allowed Scottish Water £1.0 million per annum for additional energy costs. Our assessment took account of the actual increase in energy costs from 2003-04 to 2004-05 reported by Scottish Water and its claim for increased costs in 2005-06.

Retail business operating costs

In its second draft business plan, Scottish Water claimed additional operating expenditure as a result of running a licensed retail business. The business plan divided these costs into those belonging to the core business and those that would impact the new licensed retail business. The most significant additional cost within the core business is for billing and credit management and the most significant cost in the retail business is for the development and operation of market mechanisms.

Our base operating costs reflect the costs of a vertically integrated Scottish Water. We make a separate series of adjustments to both operating and financing costs to set an appropriate wholesale price cap. This is reported in Volume 7 of the draft determination.

It is therefore not appropriate to make any adjustment to base operating costs.

Other costs

Scottish Water claimed in its first and second draft business plans that it would be required to pay additional landfill tax during the 2006-10 regulatory control period. The additional cost claimed is £8.1 million (in 2003-04 prices) over the period 2006-07 to 2009-10.

On analysing this claim, we did not consider that the cost increases would be as great as were claimed by Scottish Water. We also noted Ofwat's view in its 2004 price review that most companies in England and Wales intend to take action to avoid the tax by adopting a more sustainable approach. Taking these two factors together, we have therefore rejected this claim.

We anticipate that Scottish Water will incur the costs of the Reporter from 2006-07. We have allowed £0.3 million per year for this item.

Summary

We have allowed for the additional baseline operating costs included in Table 6.4 in this draft determination.

Table 6.4: Allowed for additions to base operating cost combined service

Combined service						
	Allowed for costs (2003-04 prices)					
Factor:	2006-07	2007-08	2008-09	2009-10		
Non-domestic rates	£3.8m	£5.2m	£6.7m	£6.7m		
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m		
Energy costs	£1.0m	£1.0m	£1.0m	£1.0m		
Bad debt	£0.0m	£0.0m	£0.0m	£0.0m		
Retail business operating costs	£0.0m	£0.0m	£0.0m	£0.0m		
Other costs eg the landfill tax	£0.0m	£0.0m	£0.0m	£0.0m		
SEPA	£0.0m	£0.0m	£0.0m	£0.0m		
Reporter ⁵²	£0.3m	£0.3m	£0.3m	£0.3m		
Total	£10.2m	£11.6m	£13.1m	£13.1m		

Baseline operating costs for 2006-10

Table 6.5 summarises the baseline that we have established and the adjustments that we have allowed to reflect new costs incurred by Scottish Water that are outside the control of management.

Table 6.5: Summary of the operating cost baseline for 2006-10

	2006-07	2007-08	2008-09	2009-10
Base operating costs (water)	£166.7m	£166.7m	£166.7m	£166.7m
Increase in operating costs – water	£7.5m	£8.9m	£10.4m	£10.4m
Base operating costs – waste water	£129.7m	£129.7m	£129.7m	£129.7m
Increase in operating costs – waste water	£2.8m	£2.8m	£2.8m	£2.8m

Conclusions

This chapter has outlined the factors that we have taken into account in setting a baseline for Scottish Water's operating expenditure in this draft determination.

⁵² Reporter costs were initially paid for by this Office. The Scottish Executive provided us with grant-in-aid to cover these costs.

We have used 2003-04 as the base year for this draft determination and we expect the new Commission to use 2004-05 as the base year for the final determination.

We apply the scope for efficiency to this baseline. This baseline has taken account of Scottish Water's estimate of the operating costs that it will incur in the remainder of the current regulatory control period.

We have adjusted reported operating expenditure in the base year to take account of: non-core operating costs, exceptional costs and atypical costs. This has enabled us to identify the underlying level of operating costs that Scottish Water incurs. This is the cost of maintaining services at existing levels.

We also assessed the extent to which Scottish Water may face additional operating costs (outside the control of management) in the 2006-10 regulatory control period and have made allowances for these costs where appropriate. This has included increased costs for non-domestic rates and pensions.

Section 3: Setting the allowed for level of operating costs

Chapter 7: New operating costs

Introduction

This chapter sets out how we have dealt with new operating expenditure in this draft determination. In Chapter 6 we described how we have set a baseline for operating expenditure. This baseline applies to costs that are already being incurred to deliver a particular set of outputs and level of service. However, over the 2006-10 regulatory control period, Scottish Water will incur new operating expenditure to deliver improvements in:

- environmental compliance;
- drinking water compliance;
- · levels of service to customers; and
- the supply/demand balance.

It is important that we scrutinise carefully Scottish Water's claims for new operating costs before they are included in price limits.

In this chapter we examine Scottish Water's claims for new operating costs for 2006-10 and describe the criteria we have used to assess them. We then present the level of new operating expenditure we have allowed for in this draft determination. In Chapter 14 we discuss the scope for efficiency that we have identified.

Defining new operating expenditure

New operating expenditure arises from the following:

Improved environmental compliance

Examples of environmental obligations include the Urban Waste Water Treatment Directive and the Bathing Waters Directive. In common with other water and waste water providers in Europe, Scottish Water has to comply with such legislation. In many cases, compliance will be achieved through capital expenditure on new or upgraded waste water treatment plants. These upgraded plants may have higher operating costs. For example, secondary

activated sludge treatment ensures higher levels of compliance, but uses more power than primary treatment and therefore may lead to higher operating costs.

Improved drinking water compliance

Examples of drinking water obligations include the cryptosporidium regulations and legislation to reduce the amount of lead in drinking water. Meeting these obligations often requires capital expenditure on water treatment works or the water distribution system. Meeting these obligations may also lead to increases in operating expenditure, for example through increased monitoring of water quality or increased rates of chemical dosing.

Enhanced service levels

The three former water authorities⁵³ lagged considerably behind the companies in England and Wales in the levels of service they provided to customers. At present there is still a considerable gap between Scottish Water and the companies south of the border. The companies in England and Wales have significantly increased operating expenditure to improve customer service in the past ten years. In our second draft business plan guidance we asked Scottish Water to identify any such new operating costs that it felt it would require to narrow the gap in customer service performance. We would have allowed any such claim that was tied to a measurable improvement in performance.

The supply/demand balance

Maintaining an appropriate supply/demand balance ensures that there is sufficient capacity (of both water and waste water) for Scottish Water to meet the demands of new customers and/or the increasing demands of existing customers.

In the long term, Scottish Water may meet increased demand for water and waste water services by building new water treatment and sewage treatment works. In the short term, however, increased demand can often

⁵³ East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority.

be dealt with through operational measures. For example, increased demand for water could be met by incremental reductions in leakage or by employing demand management techniques such as metering. Either approach may increase operating costs.

Each of these factors would lead to increases in operating expenditure. We are interested specifically in the net new operating expenditure. This is best illustrated with an example.

New legislation requires a water and waste water undertaker to achieve higher standards of effluent discharge. A waste water treatment works is already in place, but the treatment processes employed will not meet the new required standards so the plant needs to be replaced. Currently, the works incurs £50,000 a year in operating expenditure. The new compliant treatment processes will incur £75,000 per year in operating expenditure. The new operating expenditure is the difference between the post-investment level of operating expenditure and the pre-investment level (ie £75,000 less £50,000). Net new operating expenditure is therefore £25,000 per year.

Over the past 15 years, the companies in England and Wales have incurred significant new operating expenditure. This is in large part due to their investment programme. The ten water and waste water companies have incurred annual new water operating expenditure of almost £24 million since 1997-98 and annual new waste water operating expenditure of £163 million since 1997-98.

The companies in England and Wales have also invested in improving the supply/demand balance. By 2002-03, new operating expenditure on the supply/demand balance had increased by £26 million per year for the water and waste water companies since 1997-98.

New operating expenditure represented approximately 10% of total operating expenditure in the water and waste water companies in England and Wales in 2002-03. This includes new operating expenditure related to improved levels of service to customers.

How we deal with new operating expenditure

New operating expenditure can place an upward pressure on customers' bills. It is therefore important that Scottish Water provides a clear justification for any new operating costs that it expects to incur, and that any claims for new operating expenditure undergo careful scrutiny. Customers should not be expected to pay for unnecessary or inefficient levels of new operating expenditure.

We asked Scottish Water to detail claims for new operating claims in its second draft business plan. We assessed Scottish Water's claims for new operating costs against the same criteria that we used in the Strategic Review of Charges 2002-06. These were outlined in Chapter 2.

We asked the Reporter and an independent panel of engineers to scrutinise carefully the capital investment programme and the claims for new operating costs contained in Scottish Water's second draft business plan. In particular, we reviewed whether proper minimum whole life cost solutions⁵⁴ had been adopted.

New operating expenditure 2006-10

In its second draft business plan, Scottish Water submitted a total claim for new operating expenditure of £37 million by 2009-10, before efficiencies. This claim is set out in Table 7.1. It included new operating costs for both water and waste water, and covered seven separate areas of service phased across the 2006-10 regulatory control period⁵⁵.

⁵⁴ Whole life cost: this calculates the total cost in today's money of building and operating an asset over its entire life. Future costs have a lower present value than up front costs.

⁵⁵ All expenditure is reported at 2003-04 prices, before efficiencies. Total may not add due to rounding.

Table 7.1: Scottish Water's claimed new operating expenditure (pre-efficiency) 2006-10

	2006-07	2007-08	2008-09	2009-10		
Water:						
Drinking water quality enhancements	£0.7m	£3.5m	£5.1m	£26.5m		
Supply and demand balance	£0.2m	£0.7m	£1.1m	£1.5m		
Leakage ⁵⁶						
Customer service	£0.0m	£0.0m	£0.1m	£0.1m		
Water subtotal	£0.9m	£4.2m	£6.3m	£28.1m		
Waste water:						
Environmental compliance	£0.1m	£0.1m	£0.4m	£2.8m		
Supply and demand balance	£0.5m	£1.6m	£2.6m	£3.7m		
Customer service ⁵⁷	£1.3m	£1.6m	£2.1m	£2.5m		
Waste water subtotal	£0.7m	£2.1m	£3.9m	£7.9m		
Total	£1.6m	£6.3m	£10.2m	£36.0m		

We have assessed each claim individually using the criteria listed in Chapter 2. We discuss each in turn.

Water service

Drinking water quality enhancements

Scottish Water's second draft business plan estimates that it will incur the new operating expenditure in delivering water quality improvements set out in Table 7.2.

Table 7.2: Scottish Water's claimed new operating expenditure (pre-efficiency) to deliver drinking water quality enhancements 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.7m	£3.5m	£5.1m	£26.5m

This claim is before Scottish Water's assumption of an annual 1.85% improvement in efficiency.

We have concluded that Scottish Water should receive less new operating expenditure as a result of improvement to drinking water quality. We have reached this conclusion for the following reasons:

 The companies in England and Wales in 2003-04 were already delivering these enhanced quality standards. The cost to the companies of meeting these standards is already included in the benchmark baseline for Scottish Water.

- Our independent panel of engineers concluded that the nature and scope of technical solutions to meet the Ministers' objectives for drinking water quality would suggest that less operating costs are likely to be incurred.
- Our analysis of the expected completion dates of projects indicate that operating expenditure will be incurred less quickly.

Our analysis indicates that the pre-efficiency allowance for new operating expenditure set out in Table 7.3 would be appropriate.

Table 7.3: Allowed for level of new operating cost (pre-efficiency) to deliver water quality enhancements 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.1m	£0.3m	£0.9m	£6.0m

Supply and demand balance (water)

Table 7.4 outlines the new operating expenditure arising from the supply and demand balance for water that Scottish Water included in its second draft business plan.

Table 7.4: Scottish Water's claimed new operating expenditure (pre-efficiency) for the water service supply and demand balance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.2m	£0.7m	£1.1m	£1.5m

This claim is before Scottish Water's assumption of an annual 1.85% improvement in efficiency.

Our analysis has again indicated that Scottish Water requires less new operating costs. We have reached this conclusion for the following reasons:

 The Reporter advised that the projected profile could be reduced.

⁵⁶ Scottish Water states that its measures to reduce leakage will actually reduce operating expenditure marginally

⁵⁷ This includes Scottish Water's claim for sewer jetting costs of £1.2 million per year.

- Our independent panel of engineers concluded that the nature and scope of technical solutions to meet the Minister's objectives for releasing development constraints would suggest that less operating costs are likely to be incurred.
- Our analysis of the expected completion dates of projects to release development constraints indicates that operating costs will arise later than estimated.

Our analysis indicates that the allowance for preefficiency new operating expenditure set out in Table 7.5 would be appropriate.

Table 7.5: Allowed for level of new operating cost (pre-efficiency) for the water service supply and demand balance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.1m	£0.3m	£0.5m	£0.5m

Leakage

Scottish Water states that its planned measures to reduce leakage will reduce operating expenditure by £0.1 million by 2009-10. This reduction is not material to charges.

Customer service improvements (water)

In its second draft business plan, Scottish Water claimed total new operating expenditure to improve customer service for the water service of £0.1 million by 2009-10.

This claim is small and is not material to overall charges. We have accepted the claim, although it will be reduced to reflect the scope for efficiency (discussed in Chapter 14).

In Chapter 13, we discuss the improvements in Scottish Water's levels of service to customers that we have assumed will be delivered. These improvements in customer service are an integral part of this draft determination of charges.

Scottish Water declined to provide estimates for the cost that it would incur to meet the standards in England and Wales for unplanned supply interruptions, drinking water quality compliance and hosepipe restrictions. Scottish Water also returned estimates of zero costs for the response to billing queries, written complaints and telephone contacts. Unfortunately, this has meant that we could not include the difference in the level of service in water provided to customers in our assessment of Scottish Water's relative efficiency.

Waste water service

Environmental compliance (waste water)

Table 7.6 outlines the new operating expenditure arising from environmental compliance that Scottish Water included in its second draft business plan.

Table 7.6: Scottish Water's claimed new operating expenditure (pre-efficiency) for waste water environmental compliance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.1m	£0.1m	£0.4m	£2.8m

This claim is before Scottish Water's assumption of an annual 1.75% efficiency improvement.

Once again our analysis has suggested that Scottish Water should incur lower operating costs. We reached this conclusion for the following reasons:

- Our independent panel of engineers concluded that the nature and scope of technical solutions to meet the Ministers' objectives for environmental compliance would suggest that less operating costs are likely to be incurred.
- Our analysis of the expected completion dates of projects would suggest that less operating costs are likely to be incurred.

We have concluded that the pre-efficiency costs set out in Table 7.7 should be allowed for.

Table 7.7: Scottish Water's allowed for new operating expenditure (pre-efficiency) for waste water environmental compliance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.0m	£0.0m	£0.4m	£2.5m

Supply and demand balance (waste water)

Table 7.8 outlines the new operating expenditure arising from the supply and demand balance for waste water that Scottish Water included in its second draft business plan.

Table 7.8: Scottish Water's claimed new operating expenditure for the waste water service supply and demand balance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.5m	£1.6m	£2.6m	£3.7m

This claim is before Scottish Water's assumption of an annual 1.75% improvement in efficiency.

Once again our analysis suggested that Scottish Water should incur lower operating costs. We have reached this conclusion for the following reasons:

- The Reporter advised that Scottish Water's estimates were too high.
- Our independent panel of engineers concluded that the nature and scope of technical solutions to meet the Ministers' objectives for releasing development constraints should require less operating costs.
- Our analysis of the completion dates of projects to release development constraints assumed in the business plan indicated that less operating costs should be incurred.

We have concluded that the pre-efficiency costs set out in Table 7.9 should be allowed for.

Table 7.9: Scottish Water's allowed for new operating expenditure (pre-efficiency) for the waste water service supply and demand balance 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating expenditure	£0.2m	£0.8m	£1.2m	£1.2m

Customer service improvement (waste water)

In its second draft business plan, Scottish Water claimed total new operating expenditure to improve customer service for the waste water service of £1.4 million by 2009-10.

This claim is small and is not material to overall charges. We have accepted the claim, although it will be reduced to reflect the scope for efficiency (discussed in Chapter 14).

We have also allowed for Scottish Water's claim of £1.2 million per year for sewer-jetting costs.

In Chapter 13, we discuss the improvements in Scottish Water's levels of service to customers that we have assumed will be delivered. Again, these improvements in customer service are an integral part of this draft determination of charges.

Scottish Water declined to provide estimates for the cost of maintaining the same standards as in England and Wales for flooding (due to overloaded sewers and other causes), waste water treatment works compliance, category 1 and 2 pollution incidents, and category 3 pollution incidents. Scottish Water returned estimates of zero costs for the response to billing queries, written complaints and telephone contacts, and unsatisfactory sludge disposal. Unfortunately, this has meant that we could not include the differences in the level of service in waste water provided to customers in our assessment of Scottish Water's relative efficiency.

Overall level of allowed new operating expenditure

Scottish Water claimed that annual new operating expenditure of £37.2 million would be incurred by 2009-10. Our detailed analysis of this claim has led us to

conclude that we should allow annual new operating expenditure of £12.2 million (in 2003-04 prices) by 2009-10. This is detailed in Table 7.10.

expenditure. Given Scottish Water's efficiency gap⁵⁹ we see no reason why it should not be able to emulate these companies' performance.

Table 7.10: Allowed for level of new operating expenditure (pre-efficiency) 2006-10⁵⁸

	2006-07	2007-08	2008-09	2009-10
Water:				
Base	£0.0m	£0.0m	£0.0m	£0.3m
Drinking water quality enhancements	£0.1m	£0.3m	£0.9m	£6.0m
Supply/demand balance	£0.1m	£0.3m	£0.5m	£0.5m
Customer service	£0.0m	£0.0m	£0.0m	£0.0m
Water subtotal	£0.2m	£0.6m	£1.4m	£6.9m
Waste water:				
Base	£0.6m	£1.2m	£1.2m	£1.2m
Environmental enhancements	£0.0m	£0.0m	£0.4m	£2.5m
Supply/demand balance	£0.2m	£0.8m	£1.2m	£1.2m
Customer service	£0.1m	£0.3m	£0.5m	£0.5m
Waste water subtotal	£0.9m	£2.3m	£3.3m	£5.4m
Total	£1.1m	£3.0m	£4.7m	£12.2m

Conclusion

It is important that sufficient new operating expenditure is allowed for in the regulatory settlement to deliver the objectives set out by the Minister in his February statement. New operating expenditure increases customers' bills and it is therefore important that it is no higher than it needs to be.

We have assessed Scottish Water's claims for new operating expenditure against the same set of criteria used in the Strategic Review of Charges 2002-06. This has enabled us to ensure that where new operating expenditure is required, it is at an appropriate level. In Chapter 14 we discuss the scope for efficiency that we have identified.

Historically although the majority of companies south of the border have incurred significant new operating expenditure, they have been able to manage total operating expenditure such that it has remained stable or has fallen. This has been easier for companies where there is a pronounced efficiency gap in operating

⁵⁸ Totals may not add exactly due to rounding.

⁵⁹ This is set out in detail, using three different models, in Chapters 8-10.

Section 3: Setting the allowed for level of operating costs

Chapter 8: Establishing the operating cost efficiency gap – the Ofwat models

Introduction

This chapter sets out the methods that Ofwat has developed to assess the relative operating expenditure efficiency of the water and sewerage companies in England and Wales. We used these methods to assess the performance of Scottish Water and compare its performance with the companies in England and Wales.

The results of our efficiency analysis have been taken into account in the charge caps that we set in this draft determination. The level of operating costs has a direct impact on customers' bills. The scope for efficiency that we identify reduces operating expenditure and, consequently, the level of revenue that is required from customers.

This chapter sets out the following:

- A brief history of the development of Ofwat's operating expenditure econometric models.
- Details of the nine operating expenditure models.
- Criticisms of the econometric models that have been put forward by Scottish Water and the companies in England and Wales.
- Scottish Water's relative efficiency as calculated using these models.
- Details of the adjustments that we have made to the modelling results and the impact of these adjustments on Scottish Water's relative efficiency.

Development of the econometric models

Ofwat uses a top-down approach to benchmarking the English and Welsh companies and setting efficiency targets. It employs econometric modelling, a method that uses regression analysis to establish a relationship between the costs incurred by the companies and a

number of cost drivers. These cost drivers take account of both engineering and economics.

The econometric models used by Ofwat were originally developed by Ofwat and Professor Mark Stewart of the University of Warwick in the early 1990s. They were used for Ofwat's 1994 price review. They were then reviewed in the late 1990s, again with input from Professor Mark Stewart, and the revised models were used for Ofwat's 1999 price review. Ofwat published the latter set of models in January 1999 and we used this version of the models to assess the efficiency of the Scottish water industry at the Strategic Review of Charges 2002-06. We have continued to use the Ofwat models to monitor Scottish Water's progress towards achieving its efficiency targets and we publish the results of this analysis in our annual 'Costs and Performance Report'.

The Ofwat models are also used to monitor the relative efficiency of the companies south of the border on an annual basis. The results of this analysis are published in Ofwat's annual report 'Water and sewerage service unit costs and relative efficiency'60. This annual performance assessment will influence the share price of the water companies whose shares are quoted on the London Stock Exchange.61

In January 2005, Ofwat⁶² published the models that it used for its final determination. The models are broadly similar to those published by Ofwat in January 1999. There are nine models for operating expenditure:

- water resources and treatment;
- water distribution;
- water power;
- water business activities;
- sewer network;

Further information regarding the development of the Ofwat models and reviews of the models by external parties is given in Chapter 8, Volume 4 of our methodology consultation, 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency'.

⁶¹ In its response to our second open letter to Ministers, Scottish Water argued that annual performance should not be regarded as important. Such a position is not consistent with the scrutiny that investors give the companies south of the border.

A revised suite of models was originally published in January 2004, but these were subsequently revised in light of the companies' June 2004 submissions.

- large sewage treatment works;
- small sewage treatment works;
- sludge treatment and disposal; and
- sewerage business activities.

It is these models that we have used to benchmark Scottish Water.

The Ofwat econometric models

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By controlling the principal external cost drivers in the models, we can determine relative efficiency with a high degree of accuracy. The cost drivers and explanatory factors used to derive the current suite of models relate to the financial year 2003-04.

The models take different forms and are summarised in Table 8.1.

Table 8.1: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5.
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Each of these models is detailed below.

Water resources and treatment

This model predicts the costs associated with water resources, the treatment process and the operating environment. Specifically, it takes into account economies of scale at water source level and the extra costs of treatment resulting from the proportion of supplies that are taken from rivers. Costs per head are modelled rather than volumetric unit costs. This is to avoid rewarding high leakage, or penalising companies that have minimised demand.

Table 8.2: Ofwat's model for water resources and treatment operating expenditure

Water resources and treatment			
Modelled cost:	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)		
Explanatory factors	Coefficient	Standard error	
Constant	0.468	1.990	
Number of sources divided by distribution input (MI/d)	22.415	6.557	
Proportion of supplies derived from river sources	5.933	2.487	
Statistical indicators:	Number of observations: 22	R ² : 0.381	

Water distribution

This model uses the ratio of the length of large mains to small mains as the cost driver. Repairs, maintenance and inspection of large mains are likely to incur much greater costs than those on small mains. The model also reflects the higher costs of operating in urban areas, where the density of underground services and traffic congestion can impair productivity. The unit costs are again expressed per head of population, rather than by volume of water. This reduces the potential to penalise companies with low leakage and/or low demand.

Table 8.3: Ofwat's model for water distribution operating expenditure

Water distribution			
Modelled cost:	Log to base e of (distribution functional expenditure (£m) less power expenditure (£m), divided by resident population (millions))		
Explanatory factors	Coefficient	Standard error	
Constant	-5.213	0.158	
Length of main greater than 300mm diameter/ total length of main	6.106	1.941	
Statistical indicators:	Number of observations: 22	R ² : 0.331	

Water power

This model is based on the physical relationship between the amount of water pumped and the energy required. It incorporates both vertical lift and the energy required to overcome friction in pipes. The model recognises that economies of scale are available through pump maintenance and negotiation of electricity tariffs.

Table 8.4: Ofwat's model for water power operating expenditure

Water power			
Modelled cost:	Log to base e of power expenditure (£m)		
Explanatory factors	Coefficient	Standard error	
Constant	-8.930	0.265	
Log to base e of (distribution input (Ml/d) x average pumping head)	0.929	0.024	
Statistical indicators:	Number of observations: 22	R ² : 0.986	

Water business activities

This model relates business activity costs (including customer services, scientific services and the charge for doubtful debts) to the number of billed properties. It recognises that there are economies of scale. Other potential cost drivers, for example the number of complaints, are within the control of management and so are not considered valid explanatory factors.

Table 8.5: Ofwat's model for water business activities operating expenditure

Water business activities			
Modelled cost:	Log to base e of business activities expenditure (£m) plus doubtful debts (£m)		
Explanatory factors	Coefficient	Standard error	
Constant	-3.646	0.270	
Log to base e of number of billed properties (thousands)	0.917	0.042	
Statistical indicators:	Number of observations: 22	R ² : 0.960	

Sewer network

This model expresses costs per unit length of sewer. It takes into account the amount of sewage being transported through the sewerage system. This is a function of area since this affects surface water drainage volumes. Costs associated with remoteness are also a function of area. Sewer network costs are also a function of population since this will impact on sewage volumes. The model takes account of the higher costs expected in regions with a significant holiday population.

Table 8.6: Ofwat's model for sewer network operating expenditure

Sewer network			
Modelled cost:	Log to base e of sewer network functional expenditure (£m) less Environment Agency charges (£m), per kilometre of sewer for each area		
Explanatory factors	Coefficient Standard error		
Constant	-5.858	0.355	
Log to base e of area of sewer district per kilometre of sewer	0.157	0.032	
Log to base e of residential population per kilometre of sewer	0.776	0.187	
Holiday population divided by resident population	1.550	0.487	
Statistical indicators:	Number of observations: 64	R ² : 0.519	

Large sewage treatment works

The large sewage treatment works model covers those sewage treatment works serving a 'population equivalent' of at least 25,000. Population equivalent is a measure of the amount of sewage treated, both household and industrial, expressed in terms of the

number of household customers required to produce a similar strength and volume of sewage.

The model takes into account the sewage load reaching the treatment works; the type of treatment in place (activated sludge increases power costs); and the quality of the discharged effluent required to meet environmental standards. The model exhibits considerable economies of scale in the treatment of sewage at the level of individual works.

Table 8.7: Ofwat's model for large sewage treatment works operating expenditure

Large sewage treatment works			
Modelled cost:	Log to base e of functional expenditure on sewage treatment at large works (£000) less Environment Agency charges (£000) and terminal pumping costs (£000)		
Explanatory factors	Coefficient Standard error		
Constant	-1.813	0.245	
Log to base e of total load	0.800	0.027	
Activated sludge used	0.393	0.052	
Tight effluent consent for both suspended solids and BOD5	0.057	0.048	
Statistical indicators:	Number of observations: 367	R ² : 0.753	

Small sewage treatment works

This model uses average unit costs across England and Wales. This is a necessary simplification given that there are thousands of small sewage treatment works. The cost matrix takes into account the size of the works – there are significant economies of scale – and the type of treatment process.

Table 8.8: Ofwat's model for small sewage treatment works operating expenditure

Cost of small sewage treatment works										
This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost.										
Weighted average industry unit cost £000s/(kg BOD ₅ /day)										
	Primary	Secondary activated sludge	Secondary biological	Tertiary A1	Tertiary A2	Tertiary B1	Tertiary B2	Sea outfall preliminary	Sea outfall screened	Sea outfall unscreened
Size band 1	0.58	0.76	0.94	0.87	0.33	0.76	0.76	1.01	0.08	0.29
Size band 2	0.37	0.71	0.48	0.70	0.34	0.51	0.66	-	0.25	0.05
Size band 3	0.21	0.44	0.30	0.36	0.41	0.30	0.40	0.09	0.02	0.01
Size band 4	0.22	0.22	0.17	0.18	0.29	0.17	0.16	0.03	0.12	0.01
Size band 5	-	0.14	0.11	0.14	0.17	0.11	0.12	0.03	-	0.00
Number of ol	Number of observations: 500									

Sludge treatment and disposal

This model compares the costs of sludge treatment and disposal to the volume treated and the possible methods of disposal. The model uses average unit costs across England and Wales. The unit cost approach is again a necessary simplification given the large number of sludge treatment and disposal facilities.

Table 8.9: Ofwat's model for sludge treatment and disposal operating expenditure

Cost of sluc	dge treatment and d	isposal							
	cost model. Each coerage industry cost.	ompany's average an	nual expenditure is	divided by the amou	int of sludge dispos	sed to each disposa	I route and this is com	pared with the	
	Weighted average industry unit cost £000s/(thousand tonnes dry solids)								
	Farmland - untreated	Farmland - conventional	Farmland - advanced	Incineration	Landfill	Composted	Land reclamation	Other	
£000/ttds	222.8	173.5	231.5	171.1	169.5	157.8	171.0	168.4	
Number of o	observations: 80	1	1			1			

Sewerage business activities

This model uses an average unit cost per billed property across England and Wales. There are too few sewerage companies of sufficiently different size to allow economies of scale to be estimated.

Table 8.10: Ofwat's model for sewerage business activities operating expenditure

Sewerage business activities				
This is a unit cost model. Each company's average annual business activities expenditure (plus doubtful debts) is divided by the number of billed properties. This is then compared with the weighted average industry cost.				
£/billed property	Weighted average industry unit cost 12.43			
Number of observations: 10				

Criticisms of the Ofwat econometric models

As part of its first draft business plan, Scottish Water submitted a number of papers by academics and consultants criticising the Ofwat econometric models. The majority of the papers submitted by Scottish Water were written for the water and sewerage companies in England and Wales or Water UK, the industry trade body. The papers were submitted to Ofwat, two of them at the 1999 price review. Only one paper specifically

addresses the use of econometric models in Scotland. It is worth noting that although the papers are critical of the models used by Ofwat, most (but not all) of them do not contain proposals for alternative ways to assess relative efficiency.

The criticisms that we consider are relevant to our analysis of Scottish Water's relative efficiency are as follows:

- The choice of explanatory factors and type of model.
- The use of ordinary least squares regression, as opposed to other methods of assessing relative efficiency.
- The assumption that the residual represents inefficiency only and that this can then be used to set efficiency targets for the water and sewerage companies.
- The application of models to Scottish Water that were derived using information from the companies south of the border.

We address each of the criticisms in turn.

⁶³ Davidson 'Ofwat Efficiency Assessments Using Econometric Models: A comment', 1999 and Montgomery Watson 'Water distribution cost drivers', 1999.

The choice of explanatory factors

The most common criticism of the models is that they do not accurately reflect the true cost drivers in the water and sewerage industry. In particular, this criticism has been directed at the water distribution and water resources and treatment models. In September 2002, Ofwat held a workshop to review the water distribution model. At that workshop a number of concerns were raised regarding the water resources and treatment model. Ofwat reviewed the suggestions made at the workshop and derived and tested alternative models. Ofwat provided information to the companies on these alternatives, but concluded that any improvement in the explanatory power of the model was insufficient to justify a move away from the original model.

Ofwat remains confident that its models are fit for purpose and that it is not misusing the information it collects. In its final determinations⁶⁴, Ofwat states that it has not found any additional information that could materially improve its analysis. It also points out that it has worked with the companies to understand better the impact of company-specific factors. Indeed in 2003-04 Ofwat allowed 63 company claims for such factors⁶⁵. We have adopted the same approach towards company-specific factors for Scottish Water and this is discussed in Chapter 11 of this volume.

The use of ordinary least squares regression analysis

A number of commentators have criticised Ofwat's use of ordinary least squares (OLS) regression to assess relative efficiency. Ofwat commissioned Europe Economics to consider alternatives to the OLS approach. Europe Economics used data envelopment analysis (DEA) and stochastic frontier analysis (SFA). Ofwat noted that although the results of the alternative approaches were different in a number of respects, the overall picture was similar and in most cases there was a high degree of correlation between the results of all three methods⁶⁶.

Scottish Water also submitted a paper by Weyman-Jones⁶⁷, which is inconclusive on SFA. The author concludes that it is possible that either no inefficiency is present, or the company dataset is too small or too variable for SFA to converge on a result. However, the author recognises that regulators have to make judgements about the comparative efficiency of the companies they regulate.

We recognise that there is a potential role for other methods of assessing relative efficiency. In its reviews of the price limits of both Sutton & East Surrey and Mid Kent in 2000⁶⁸, the Competition Commission recommended that Ofwat should not rely solely on its suite of nine operating expenditure models⁶⁹. We took account of that recommendation in our Strategic Review of Charges 2002-06 and developed our own alternative model. Our alternative model is discussed more fully in Chapter 10.

Interpretation of the residual

The third key criticism of the models is that the residual from the econometric analysis should not be interpreted wholly as representing efficiency. In a report for Water UK⁷⁰, Professor Cubbin breaks the residual down between six factors: omitted variables, poor proxy, sampling error, measurement error, mathematical form and efficiency. The author carries out his analysis for each of the nine operating expenditure models and the nine capital maintenance expenditure models. He concludes that for the operating expenditure models, efficiency accounts for around 40% of the residual on the water service and around 50% of the residual on the sewerage service.

Ofwat reviewed the paper and concluded that uncertainties of this scale are unlikely under normal operating circumstances⁷¹. Ofwat also pointed out that it employs other mechanisms and checks which ensure that potential errors and uncertainties are taken into account.

⁶⁴ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

⁶⁵ Ofwat's water and sewerage service unit costs and relative efficiency 2003-04 report, page 59.

⁶⁶ Ofwat, 'Water and sewerage service unit costs and relative efficiency: 2001-02 report', December 2002.

⁶⁷ Weyman-Jones, 'Comparative efficiency analysis in the water industry', Fourth draft, December 2002.

⁶⁸ Competition Commission reports 'Sutton and East Surrey Water plc: A report of the references under sections 12 and 14 of the Water Industry Act 1991' (September 2000) and 'Mid Kent Water plc: A report of the references under sections 12 and 14 of the Water Industry Act 1991' (September 2000).

⁶⁹ In response, Ofwat developed a simple overall service model to be used as a check on the results of its efficiency analysis.

⁷⁰ Professor John Cubbin, 'Assessing Ofwat's efficiency econometrics', March 2004.

⁷¹ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

We agree with Ofwat's view. Several elements of Ofwat's approach should allay companies' concerns regarding the results of the econometric models. First, Ofwat has recognised the potential for errors in information and has adjusted the residuals downwards in an effort to reduce the impact of these errors. It adjusts the water service residual by 10% and the sewerage service residual by 20%.

Ofwat also does not set efficiency targets to close 100% of the assessed efficiency gap. At both the 1999 and 2004 price reviews, Ofwat set targets to close 60% of the gap. Incentive-based regulation seeks to reward a determined management that can outperform its regulatory contract. There would be little opportunity to reward companies if targets were set at the theoretical maximum scope for improvement. It is not reasonable, therefore, to suggest that a target for gap closure of less than 100% indicates that the residual is not an accurate measure of the efficiency gap.

We have broadly followed Ofwat's approach. We have taken a number of steps which we believe should mitigate Scottish Water's concerns regarding the use of the residual as a measure of efficiency.

Applying the Ofwat models to Scottish Water

Only one of the papers submitted by Scottish Water specifically addresses our use of the Ofwat models to assess Scottish Water's relative efficiency. This paper⁷², by Professor John Cubbin of City University, is an update of the earlier paper written for Water UK, which we discussed earlier. His analysis is extended to examine issues arising from the use of the Ofwat models to assess Scottish Water's relative efficiency. The author concludes that using these models to assess Scottish Water's efficiency could introduce errors into the results. He claims that this is because the models were developed specifically for the companies in England and Wales. The amount of the residual that is due to efficiency is therefore lower in Scotland than it is south of the border.

Professor Cubbin has examined each of the Ofwat models in detail and set out reasons why he thinks the

models are less suitable for application to Scottish Water. These reasons appear to relate to differences between the operating environment in Scotland and in England and Wales. Table 8.11 sets out the issues which he believes have an impact on each of the models.

Table 8.11: Issues raised by Professor Cubbin regarding the use of Ofwat's econometric models to calculate Scottish Water's relative efficiency

Model	Issues	
Water distribution	Rurality: travel costs, electricity, number of service reservoirs	
Water resources and treatment	Sources; size of treatment plant; raw water quality	
Water power	Electricity distribution costs; non-pumping costs	
Water business activities	Cryptosporidium testing; bad debt	
Sewer network	Lateral sewers; possibly age and condition of assets	
Large sewage treatment works	Possibly electricity costs	
Small sewage treatment works	Very small works; deep rural effect; possibly septic tanks effect	
Sludge treatment and disposal	Sparsity; specialised sludge treatment works	
Sewerage business activities	Bad debt	

Almost all of these potential problems were included as special factors in Scottish Water's submission. We have adopted the same approach as Ofwat in our analysis of special factors. If Scottish Water has presented a robust claim for a company-specific factor, then we have reduced the calculated residual by the amount of that claim. We therefore consider that the models do not need to be altered to take account of these issues.

Professor Cubbin also stated that we could improve the models by including information from Scottish Water in re-estimated models. This would improve the models in two ways: it would increase the number of comparators and would produce what are perhaps more relevant models. We have re-estimated the Ofwat models including information from Scottish Water. These models are further discussed in Chapter 9. These re-estimated models also address any concerns that might remain about Scottish Water being set a slightly harder target using the Ofwat models because they did not use information from Scottish Water.

⁷² Professor John Cubbin, 'How appropriate are Ofwat's efficiency models for Scotland?', October 2004.

Results from applying the Ofwat models to Scottish Water

We explained earlier that the Ofwat operating expenditure econometric models were developed using 2003-04 information from the water and sewerage companies in England and Wales. We have input information from Scottish Water into these models. We explained the use of each model in our methodology. We exclude the following costs from our benchmarking:

- Charges paid by the companies to the Environment Agency (for either water abstraction or discharge consents) and charges paid by Scottish Water to the Scottish Environment Protection Agency (for discharge consents).
- Local authority rates these are set by local authorities and cannot be compared between Scotland, England and Wales.
- Third party costs these comprise an assortment of costs imposed upon the companies and Scottish Water in respect of, for example, diversions of mains and sewers to accommodate new road schemes.
- The estimated operating costs of PPP works. Scottish Water estimated these costs to be £43.3 million, covering the operation of sewer networks, sewage treatment works and sludge treatment and disposal facilities. Of this £43.3 million, around £1.1 million is costs that Scottish Water incurs in managing its PPP contracts. We have included this £1.1 million in our efficiency analysis because we take the view that this element of costs is under the control of Scottish Water. The remaining £42.2 million is not under the direct control of Scottish Water and so is excluded from the analysis.

We also made an adjustment to reflect the small sewage works operated by Scottish Water.

The Ofwat matrix of unit costs for small sewage treatment works does not include unit costs for three types of works operated by Scottish Water. Some 3% of sewage load is treated at these works in Scotland. We used information

from Scottish Water to calculate unit costs for these three types of works. The unit costs and categories of works are outlined in Table 8.12.

Table 8.12: Additional small sewerage works unit costs

Works category	Unit cost £000/(kg BOD5/day)			
Primary works size band 5	0.21			
Sea preliminary works size band 2	0.02			
Screened sea outfalls size band 5	0.01			

Efficiency scores

The econometric models generate a series of efficiency scores (the residuals in the statistical analysis). We compare these residuals in order to establish the relative efficiency of Scottish Water and the companies south of the border.

We set out the results of our analysis of Scottish Water's efficiency in 2003-04 in Table 8.13. We present our results for the water and sewerage services separately and provide a combined result for the whole business. We do not report scores for the individual models. This is for two reasons.

- Our efficiency targets are high-level targets. We do not set targets for individual components of expenditure.
- Issues of cost allocation can arise at an individual model level, which would skew the results of individual models. Issues of cost allocation are not material at the higher, summary level. Any such problems are likely to balance out at a service level.

Table 8.13: Scottish Water's efficiency scores 2003-04

	Efficiency score
Water service	112
Sewerage service	130

We adjust the efficiency scores such that the average score in England and Wales is 100. These results do not take into account residual adjustments, any special factors or differences in the level of service provided to customers.

The efficiency gap is calculated as follows: using the average water service as an example, Scottish Water's efficiency score is 112 and that of the average is 100. The gap is calculated as ((112-100)/112)*100.

In its 'Water and sewerage service unit costs and relative efficiency 2003-2004 report', Ofwat reported that the benchmark company for the water service in England and Wales was Wessex Water. For the sewerage service, the benchmark company was Yorkshire Water. These two companies were used by Ofwat when it calculated the level of catch-up efficiency to include in companies' efficiency targets⁷³. We can use our results to calculate the efficiency gap between Scottish Water and these benchmark companies. Table 8.14 sets out the efficiency gaps between Scottish Water and the average company in England and Wales and the efficiency gap between Scottish Water and the two benchmark companies.

Table 8.14: Scottish Water's efficiency gap

	Efficiency gap
Average – water service	11%
Wessex – water service	30%
Yorkshire – water service	26%
Average – sewerage service	23%
Wessex – sewerage service ⁷⁴	39%
Yorkshire – sewerage service	34%
Average – combined ⁷⁵	16%
Wessex – combined	34%
Yorkshire – combined	29%

Table 8.14 shows that the efficiency gap between Scottish Water and the benchmark companies is around 30%.

Residual adjustments

We have already explained that Ofwat adjusts the companies' residuals by 10% on the water service and 20% on the sewerage service to take account of potential errors in its modelling. In our methodology consultation, we indicated that we had concerns about making adjustments to the residuals. We were concerned that the adjustment to Scottish Water's

residual would be considerably larger than the comparable adjustments in England and Wales. This is because Scottish Water has a relatively large residual. Such a large adjustment may have a disproportionate impact on customers' bills.

Although we continue to have reservations about these adjustments, Scottish Water's recent improvements in operating expenditure efficiency have slightly reduced our concerns. The adjustments to Scottish Water's residuals are now smaller. We have therefore decided to apply the same residual adjustments as Ofwat applies in assessing Scottish Water's relative efficiency. The impact of these adjustments on Scottish Water's relative efficiency is shown in Table 8.15.

Table 8.15: Scottish Water's efficiency score after residual adjustments

	Efficiency score
Water service	111
Sewerage service	124

We have adjusted the results in Table 8.15 such that the average in England and Wales is 100. The biggest difference is in the results for the sewerage service. This reflects the larger adjustment to the sewerage residual and Scottish Water's relatively poor performance in this area. These adjustments are applied to all companies rebalanced to the England and Wales average. Scottish Water's relative efficiency does not improve by as much as might have been expected. The efficiency gaps, however, are smaller. This is set out in Table 8.16.

⁷³ It is important to remember that Ofwat sets separate efficiency targets for the water and sewerage services.

The reason that there is a larger efficiency gap to Wessex than Yorkshire on the sewerage service is that at this stage in our analysis, we have not taken into account either special factors or pension adjustments.

We use the separate water and sewerage scores to calculate the combined efficiency gap for both services.

Table 8.16: Scottish Water's efficiency gaps after adjustments of the residuals

	Efficiency gap				
Average – water service	10%				
Wessex – water service	28%				
Yorkshire – water service	23%				
Average – sewerage service	19%				
Wessex – sewerage service	33%				
Yorkshire – sewerage service	29%				
Average – combined	14%				
Wessex – combined	30%				
Yorkshire – combined	26%				

Table 8.16 shows that even after the adjustments to the residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is above 25%.

Conclusions

In this chapter we have set out the methods that Ofwat uses to assess efficiency in operating expenditure for the water and sewerage companies in England and Wales. We have explained why we believe that its methods are robust and have addressed criticisms of the models from Scottish Water and other stakeholders.

We have applied the Ofwat models to Scottish Water's operating expenditure, asset and customer information for 2003-04. This analysis shows that there is still a significant gap in efficiency between Scottish Water and the benchmark companies in England and Wales. Even after we adjust the calculated residuals, the efficiency gap between Scottish Water and the benchmark companies is above 25%.

These results help to inform our decisions on the level of efficiency targets to set for Scottish Water, which are considered in more detail in the chapters which follow.

Section 3: Setting the allowed for level of operating costs

Chapter 9: Establishing the operating cost efficiency gap – the modified Ofwat models

Introduction

In Chapter 8 we set out the methods that Ofwat has developed for assessing the efficiency in operating expenditure of the water and sewerage companies in England and Wales. We applied the Ofwat models to Scottish Water and reported the results of that analysis. This analysis indicated that a significant efficiency gap remains.

In this chapter we repeat the analysis using recalculated versions of Ofwat's econometric models. We have reworked the Ofwat models to include information from Scottish Water in 2003-04. The chapter covers the following issues.

- How we included information from Scottish Water to create a modified set of econometric models.
- The details of the modified models.
- The results of our analysis of Scottish Water's relative efficiency using the modified models.
- The adjustments that we made to the modelling results and our conclusions on Scottish Water's relative efficiency.

We believe that by recalculating econometric models that include information from Scottish Water, we have addressed many of the criticisms of the models that Scottish Water has raised.

Information from Scottish Water

The information from Scottish Water that we used to develop the modified set of models relates to the financial year 2003-04. Ofwat also used information from the companies in 2003-04 in developing its models. We received the necessary information from Scottish Water in its 2004 Annual Return⁷⁶. The water and sewerage companies in England and Wales submit a similar June Return to Ofwat. We have made every effort to ensure that we collect information on the same basis.

In 2003-04, the Reporter scrutinised Scottish Water's Annual Return for the first time. Where the Reporter raised issues about the accuracy and quality of information that Scottish Water had reported, we were able to discuss these issues with Scottish Water and to take account of its responses in our analysis.

In 2003-04, Scottish Water made a number of changes to the information provided in its Annual Return. These related primarily to operating expenditure. Scottish Water indicated that these changes reflected better information provided by its new financial reporting system.

Scottish Water has made good progress in improving the asset and customer information that we used in the modelling. Some issues remain relating to, for example, the information that is provided about how much water is put into the distribution system, and the amount of pumping necessary. We believe that these issues are not material to our assessment of the scope for efficiency.

PPP

We have excluded information about the costs, customers served and asset bases of Scottish Water's PPP contracts. We recognise that Scottish Water cannot control the operating costs at PPP works.

Developing the modified models

We used the same method that Ofwat uses in developing our models. The information that the companies in England and Wales provide to Ofwat is published on the Ofwat website. We also took account of the adjustments to costs that Ofwat had made. This included adjustments to the allocation of leakage expenditure, which were published in Ofwat's 'Water and sewerage service unit costs and relative efficiency 2003-2004 report'. We checked the consistency of the information that we used from the companies south of the border by ensuring that we could replicate Ofwat's calculations in every aspect.

⁷⁶ The Annual Return is an annual submission made to us by Scottish Water that covers all aspects of the business, including operating expenditure, asset information and customer information.

We then added information from Scottish Water to the information provided by the companies. We used regression analysis and unit cost calculations to develop the modified models. The results of our analysis are outlined below.

The modified models

We did not change the form of the Ofwat models, and developed a suite of nine operating expenditure models:

- water resources and treatment,
- water distribution,
- water power,
- water business activities,
- sewer network,
- large sewage treatment works,
- small sewage treatment works,
- sludge treatment and disposal, and
- sewerage business activities.

Water resources and treatment

We developed the water resources and treatment model shown in Table 9.1.

Table 9.1: Modified model (including Scottish Water information) for water resources and treatment operating expenditure

Water resources and trea	tment					
Modelled cost:	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency or Scottish Environment Protection Agency charges (£m), divided by resident population (millions)					
Explanatory factors	Coefficient Standard error					
Constant	0.473	1.940				
Number of sources divided by distribution input (MI/d)	22.470	6.377				
Proportion of supplies derived from river sources	5.920 2.422 s					
Statistical indicators:	Number of observations: R2: 0.384					

The information from Scottish Water has not had a significant impact on the coefficients of the model.

Water distribution

We developed the water distribution model shown in Table 9.2.

Table 9.2: Modified model (including Scottish Water information) for water distribution operating expenditure

Water distribution							
Modelled cost:	Log to base e of (distribution functional expenditur (£m) less power expenditure (£m), divided by resident population (millions))						
Explanatory factors	Coefficient Standard error						
Constant	-5.221	0.151					
Length of main greater than 300mm diameter/ total length of main	6.225	1.815					
Statistical indicators:	Number of observations: 23	R ² : 0.359					

The introduction of information from Scottish Water has again not had a significant impact on the coefficients of the model.

Water power

We developed the water power model shown in Table 9.3.

Table 9.3: Modified model (Scottish Water information included) for water power operating expenditure

Water power						
Modelled cost:	Log to base e of power expenditure (£m)					
Explanatory factors	Coefficient Standard error					
Constant	-8.968	0.267				
Log to base e of (distribution input (MI/d) x average pumping head)	0.934	0.024				
Statistical indicators:	istical indicators: Number of observations: 23					

The information from Scottish Water has again not had a significant impact on the coefficients of the model.

Water business activities

We developed the water business activities model shown in Table 9.4.

Table 9.4: Modified model (Scottish Water information included) for water business activities operating expenditure

Water business activities						
Modelled cost: Log to base e of business activities expenditure (£m plus doubtful debts (£m)						
Explanatory factors	Coefficient Standard error					
Constant	-3.710	0.267				
Log to base e of number of billed properties (thousands)	0.929	0.041				
Statistical indicators:	Number of observations: R ² : 0.961					

The information from Scottish Water has not had a significant impact on the coefficients of the model.

Sewer network

We developed the sewer network model shown in Table 9.5.

Table 9.5: Modified model (Scottish Water information included) for sewer network operating expenditure

Sewer network						
Modelled cost:	Log to base e of sewer network functional expenditure (£m) less Environment Agency or Scottish Environment Protection Agency charges (£m), per kilometre of sewer for each area					
Explanatory factors	Coefficient	Standard error				
Constant	-5.923	0.365				
Log to base e of area of sewer district per kilometre of sewer	0.192	0.031				
Log to base e of residential population per kilometre of sewer	0.701	0.192				
Holiday population divided by resident population	1.238	0.502				
Statistical indicators:	Number of observations: 68	R ² : 0.515				

The information from Scottish Water has not had a significant impact on the coefficients of the model.

Large sewage treatment works

We developed the large sewage treatment works model shown in Table 9.6.

Table 9.6: Modified model (Scottish Water information included) for large sewage treatment works operating expenditure

Large sewage treatment	works					
Modelled cost:	Log to base e of functional expenditure on sewage treatment at large works (£000) less Environment Agency or Scottish Environment Protection Agency charges (£000) and terminal pumping costs (£000)					
Explanatory factors	Coefficient Standard error					
Constant	-1.744	0.244				
Log to base e of total load	0.796	0.027				
Activated sludge used	0.357	0.052				
Tight effluent consent for both suspended solids and BOD5	0.016	0.048				
Statistical indicators:	Number of observations: R2: 0.734					

The information from Scottish Water has not had a significant impact on the coefficients of the model.

Small sewage treatment works

We developed the small sewage treatment works model shown in Table 9.7.

Table 9.7: Modified model (Scottish Water information included) for small sewage treatment works operating expenditure

Cook of amou		4 a 4 a 1									
Cost of small	Cost of small sewage treatment works										
This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost.									industry cost.		
	Weighted a	verage industry u	nit cost £000s/	(kg BOD5/day)							
	Primary	Primary Secondary activated sludge biological Tertiary A1 Tertiary A2 Tertiary B1 Tertiary B2 Sea outfall preliminary Screened unscree									
Size band 1	0.53	0.69	0.88	0.87	0.35	0.74	0.58	1.01	0.08	0.09	
Size band 2	0.32	0.61	0.45	0.66	0.35	0.5	0.62	0.02	0.14	0.08	
Size band 3	0.17	0.38	0.29	0.35	0.41	0.30	0.39	0.05	0.02	0.03	
Size band 4	0.19	0.22	0.17	0.18	0.29	0.17	0.16	0.02	0.06	0.01	
Size band 5	0.21	0.16	0.12	0.14	0.18	0.11	0.12	0.03	0.01	0.00	

Adding in the information from Scottish Water does appear to have had an impact on the unit costs in the model. If we compare the unit costs in Table 9.8 with those of the Ofwat model in Table 8.8, we can see that a number of the unit costs have changed. In particular, many of the unit costs for the smaller size bands have decreased. This perhaps appears to be a surprising effect - we would generally expect smaller sewage treatment works to be affected by dis-economies of scale and to incur higher unit costs. Indeed, Scottish Water has argued that it incurs higher costs than the companies in England and Wales because it has a large number of small sewage treatment works. We would expect these higher costs to have been reflected in Scottish Water's reported costs, but this does not appear to be the case.

In the June Return we collect information from Scottish Water on the costs of running very small sewage treatment works. We split the existing Ofwat size band 1 works (population equivalent up to 250) into two bands:

- Size band 0 population equivalent up to 100;
- Size band 1 population equivalent 100-250.

At the Strategic Review of Charges 2002-06 we developed unit costs for these size bands. We applied our modified small works unit costs, ie Scottish size bands 0 and 1 unit costs and the Ofwat unit costs for size bands 2 to 5 in our analysis of the relative efficiency of the three Scottish water authorities.

We have estimated separate size band 0 and band 1 unit costs for Scottish Water. The water and sewerage companies do not split their works into these size bands and we have had to rely on Scottish Water's reported costs and loads for these works. The results of our analysis are shown in Table 9.8.

Table 9.8: Unit costs for size band 0 and size band 1 sewage treatment works

Cost of small	cost of small sewage treatment works									
This is a unit c	This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost									industry cost.
	Weighted a	verage industry u	nit cost £000s/	(kg BOD5/day)						
	Primary	Secondary activated sludge	Secondary biological	Tertiary A1	Tertiary A2	Tertiary B1	Tertiary B2	Sea outfall preliminary	Sea outfall screened	Sea outfall unscreened
Size band 0	0.12	0.35	0.26	1.74	0.55	0.90	-	-	-	0.07
Size band 1	0.17	0.35	0.26	0.38	-	0.26	0.22	-	-	0.06

Our analysis shows that many of the calculated unit costs for the split bands are lower than those for Ofwat's band 1.

We examined Scottish Water's residual on small sewage treatment works using the single size band 1 (Table 9.8) and the two band options (Table 9.9). We found that Scottish Water's residual was higher when we applied the separate size band unit costs. Scottish Water appeared to be more inefficient if we used the two size bands. We have therefore decided to use the unit costs in Table 9.8 to measure Scottish Water's relative efficiency in operating small sewage treatment works.

Sludge treatment and disposal

We developed the sludge treatment and disposal model shown in Table 9.9 when we included information from Scottish Water.

Table 9.9: Modified model (Scottish Water information included) for sludge treatment and disposal operating expenditure

Cost of sludge	treatment and disp	osal									
	st model. Each comp ge industry cost.	any's average annu	al expenditure is di	vided by the amoun	t of sludge dispose	ed to each disposal	route and this is con	npared with the			
	Weighted averag	/eighted average industry unit cost £000s/(thousand tonnes dry solids)									
	Farmland - untreated	Farmland - conventional	Farmland - advanced	Incineration	Landfill	Composted	Land reclamation	Other			
£000/ttds	222.8	174.9	235.7	171.1	191.1	213.9	191.7	165.7			
Number of obs	ervations: 88	1	1			•					

Three of the unit costs in Table 9.10 are significantly higher than those in the Ofwat model (Table 8.9). These are the unit costs for landfill, composted and land reclamation. This is likely to be an indication that

Scottish Water incurs relatively high costs in its treatment and disposal of sludge.

Sewerage business activities

We developed the sewerage business activities model shown in Table 9.10 when we included information from Scottish Water.

Table 9.10: Modified model (including information from Scottish Water) for sewerage business activities operating expenditure

Sewerage business activities			
This is a unit cost model. Each company's average annual business activities expenditure (plus doubtful debts) is divided by the number of billed properties. This is then compared with the weighted average industry cost.			
£/billed property Weighted average industry unit cost 12.81			
Number of observations: 11			

The information from Scottish Water has resulted in a slight increase in the unit cost.

Calculation of Scottish Water's relative efficiency: The modified models

We have used the modified set of econometric and unit cost models to assess Scottish Water's relative efficiency. We used 2003-04 information for both Scottish Water and for the companies south of the border in our analysis.

We have treated third party, Environment Agency, Scottish Environment Protection Agency, local authority rates and PPP costs in the same way in this revised analysis⁷⁷.

Results of our analysis

The results of our analysis are shown in Table 9.11. This table also includes the results of our original analysis using the Ofwat models. We show Scottish Water's relative efficiency in water service, sewerage service and water and sewerage combined.

Table 9.11: Results of our relative efficiency modelling

	Efficiency score – Ofwat models	Efficiency score – modified models
Water service	112	112
Sewerage service	130	127

The results of our analysis have been adjusted such that the average score is 100. These results do not include any residual adjustments nor do they include special factors or any differences in the levels of service provided to customers.

Scottish Water's level of efficiency appears slightly better when we use the modified models. However, the more important comparison is not the absolute improvement but Scottish Water's performance relative to the benchmark companies.

Table 9.12 shows the efficiency gap between Scottish Water and the average in England and Wales and between Scottish Water and the two benchmark companies. (Wessex Water for the water service and Yorkshire Water for the sewerage service). Table 9.12 also includes the results of our analysis from Chapter 8.

Table 9.12: Scottish Water's efficiency gap

	Efficiency gap ⁷⁸ – Ofwat models	Efficiency gap – modified models
Average – water service	11%	11%
Wessex – water service	30%	30%
Yorkshire – water service	26%	26%
Average – sewerage service	23%	21%
Wessex – sewerage service ⁷⁹	39%	38%
Yorkshire – sewerage service	34%	33%
Average – combined ⁸⁰	16%	15%
Wessex – combined	34%	33%
Yorkshire – combined	29%	29%

Table 9.12 shows that the efficiency gap between Scottish Water and the benchmark companies is still around 30%, even when we use the modified models.

⁷⁷ For further information, see Chapter 8.

The efficiency gap is calculated as follows: using the average water service as an example, Scottish Water's efficiency score is 112 and that of the average is 100. The gap is calculated as ((112-100)/112)*100.

The reason that there is a larger efficiency gap to Wessex than Yorkshire on the sewerage service is that at this stage in our analysis, we have not taken into account either special factors or pension adjustments.

⁸⁰ We use the separate water and sewerage scores to calculate the combined efficiency gap for both services.

Residual adjustments

We have already explained that Ofwat adjusts the companies' residuals by 10% on the water service and 20% on the sewerage service to take account of potential errors in the information and in its statistical processes.

As explained previously, we have decided to apply the same residual adjustments to Scottish Water as Ofwat applied to the companies in England and Wales. The impact of these adjustments on Scottish Water's relative efficiency is shown in Table 9.13.

Table 9.13: Scottish Water's efficiency score after residual adjustments

	Adjusted efficiency score – Ofwat models	Adjusted efficiency score – modified models	
Water service	111	111	
Sewerage service	124	122	

The results in Table 9.13 have been adjusted such that the average is 100. The adjustments to residuals are applied to all companies and the modelled results are adjusted to set the average company at 100. Scottish Water's relative efficiency improves but there is still a significant gap. Our results are shown in Table 9.14.

Table 9.14: Scottish Water's efficiency gaps after residual adjustments

	Efficiency gap – Ofwat models	Efficiency gap – modified models
Average – water service	10%	10%
Wessex – water service	28%	27%
Yorkshire – water service	23%	23%
Average – sewerage service	19%	18%
Wessex – sewerage service	33%	32%
Yorkshire – sewerage service	29%	28%
Average – combined	14%	13%
Wessex - combined	30%	29%
Yorkshire – combined	26%	25%

Table 9.14 shows that, even after the adjustments to residuals, the efficiency gap between Scottish Water and the average in England and Wales is around 14%. The gap between Scottish Water and the benchmark companies in England and Wales is around 25% to 30%.

Conclusions

In this chapter we have explained how we developed modified versions of the Ofwat econometric models using information from Scottish Water. We outlined why we believe these revised models address some of the criticisms that Scottish Water has made of our use of the Ofwat econometric models.

We used the modified models to assess Scottish Water's operating expenditure efficiency in 2003-04. We concluded that these models also indicate that a significant efficiency gap exists between Scottish Water and the benchmark companies in England and Wales.

Section 3: Setting the allowed for level of operating costs

Chapter 10: Establishing the operating cost efficiency gap – our alternative model

Introduction

Chapter 8 set out our assessment of the relative efficiency of Scottish Water using the models that were developed and used by Ofwat as part of its 2004 price review. Chapter 9 repeated this assessment using revised Ofwat models. We developed these revised models using information both from Scottish Water and from the companies in England and Wales. In both cases we concluded that there remains a significant efficiency gap.

We have also therefore sought to assess the scope for efficiency using a different approach. In this chapter we discuss the results of our analysis using an alternative unit cost model that we have developed. This chapter sets out:

- how the alternative model was developed;
- the structure of the alternative model;
- the results of our analysis of Scottish Water's relative efficiency using the alternative model;
- our conclusions regarding the robustness of our efficiency assessments.

Development of the alternative model

We originally developed the alternative model as part of the Strategic Review of Charges 2002-06. The alternative model was developed in response to the view expressed by the Competition Commission that Ofwat should not rely solely on its suite of nine operating expenditure models to assess relative efficiency⁸¹. The alternative model also provided a useful check on the results of our econometric modelling. We have continued to use the alternative model and have reported the results of our benchmarking analysis in our 2001-02 and 2002-03 Costs and Performance reports.

In preparation for this draft determination we reviewed both the cost drivers included in the model and the structure of the model. We developed two versions, both of which use information from 2003-04. The first version of the model was developed using information from the ten water and sewerage companies in England and Wales. This is the same approach that we used for the Strategic Review of Charges 2002-06. At that time, we were unable to incorporate cost allocation information from the three water authorities in our development of the alternative model. We are pleased to note that Scottish Water has made considerable progress in improving its management information. This has allowed us to develop a version of the alternative model that incorporates management information from Scottish Water.

We have used both versions of the alternative model to assess Scottish Water's relative efficiency. The first version of the alternative model uses information from the same companies as the Ofwat econometric models. The second version uses information from the same companies as our modified version of the Ofwat econometric models.

Structure of the alternative model

In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models. We needed an approach that could provide an independent check on the results given by the econometric models. The value of the alternative model as an independent check would clearly have been reduced if the basis of the model differed only slightly from the econometric models.

Both versions of the alternative model have the same structure and are based on the premise that most running costs are driven by asset use, volumes and/or customers. The model calculates the impact of each of these cost drivers separately for a number of activities.

⁸¹ The Competition Commission's consideration of the price limits for Mid Kent Water and Sutton & East Surrey Water in 2000.

Alternative model activities

The alternative model splits the water and sewerage business into ten different activities:

- water abstraction and treatment;
- water distribution;
- business activities (water);
- bad debt (water);
- sewage collection;
- · simple sewage treatment;
- complex sewage treatment;
- processing sludge;
- · business activities (sewerage); and
- bad debt (sewerage).

For each of these activities, we determine the principal factors that would affect comparisons of operating costs between Scottish Water and the water and sewerage companies in England and Wales. As with the econometric models, we populate the model with published information from the annual returns of Scottish Water and the companies south of the border. We use this information to predict what it would cost, on average, to carry out each activity. We are primarily interested in the total predicted costs for the water service, the sewerage service and the combined services. The results of our modelling allow us to compare total predicted costs with actual reported costs. This comparison indicates the likely scope for improvement.

Cost drivers

Tables 10.1 and 10.2 set out the cost drivers (for water and sewerage respectively) that we identified for each activity.

Table 10.1: Alternative model – cost drivers by activity for the water service

Activity	Cost drivers used in the model, associated with each activity				
	Assets operated	Asset attribute	Customers served	Volume	Other
Abstraction and treatment	Impounding reservoirs and lochs	Number and average size of each asset type		Annual distribution input	Average pumping head in abstraction and
	Boreholes and springs				treatment
	River and burn abstraction				
	Simple water treatment works				
	Complex water treatment works				
Water distribution	Large diameter water mains	Length of network Number of connected	Number of connected customers		Average pumping head in
	Small diameter water mains		customers		the distribution syste
	Water pumping stations	Number and average size of each asset type			
	Service reservoirs	size or each asset type			
Business activities			Number of billed water customers – household (unmeasured, measured) and non-household (unmeasured, measured)		Annual number of water samples taken
Bad debt					Annual revenue billed

Table 10.2: Alternative model – cost drivers by activity for the sewerage service

Activity	Cost drivers used in the model, associated with each activity				
	Assets operated	Asset attribute	Customers served	Volume	Other
Sewage collection	wage collection Sewers Length of network Pumping stations Number and average size Number and average			Size of area served	
		customers			
	Storm outfalls	Number			
Simple sewage treatment	Sea outfalls – screened and unscreened	Number and average size		Load treated	
	Preliminary treatment works				
	Primary treatment works				
	Public septic tanks	Number			
Complex sewage treatment	Secondary treatment works using i) activated sludge processes and ii) biological processes	Number and average size		Load treated	
	Tertiary treatment works using i) activated sludge processes and ii) biological processes				
Processing sludge	Own sludge works and sludge treatment centres	Number and average size		Tonnes disposed (dry weight)	
Business activities			Number of billed sewerage customers – household (unmeasured, measured) and non-household (unmeasured, measured)		
Bad debt					Annual revenue billed

We use information from Scottish Water and from the water and sewerage companies for each of the cost drivers listed above. The aim is to build up a set of predicted costs associated with each driver, and to add

up each of the predicted costs to obtain a prediction of the total cost of each activity. We also need to take account of any economies of scale. This is discussed below.

Economies of scale

In order to calculate each element of predicted cost, we could adopt an approach whereby we simply multiply each of the cost driver measures by a unit cost. For example, we could calculate a unit cost for a water treatment works and multiply that unit cost by the number of works to arrive at a predicted cost for each company.

However, for many activities, the bigger the asset, the lower the unit cost of operation. These economies of scale at asset level can be significant in the water industry. In the alternative model, we are particularly interested in economies of scale that are a function of the type and size of the assets. We have used information from the annual returns of the companies and of Scottish Water to estimate economies of scale associated with different types of assets. As far as possible, we have sought to ensure that our estimates of economies of scale are appropriate. For example, we have different estimates of economies of scale for simple sewage treatment works and complex sewage treatment works.

The impact of economies of scale is set out more fully in Chapter 9 of Volume 4 of our methodology consultation. In simple terms, we use information about the size of the assets that are operated by each water and sewerage company, and our estimates of the economies of scale, to determine a 'standard' size for each type of asset within the model. We are then able to calculate how many such 'standard' size assets each water and sewerage service provider has in its asset base. This allows us to calculate a single unit cost for each asset type. We multiply the number of 'standard' assets by the appropriate unit cost to calculate the predicted costs of operating each company's assets.

We assume that economies of scale do not apply to nonasset costs. The model simply uses the information relating to customer numbers, volumes and so on that is provided by the companies and Scottish Water.

Results of applying the alternative model

When we use the model to assess relative efficiency, we excluded the same costs as in Chapters 8 and 9 from our analysis.

Relative efficiency

The results of our analysis are set out in Table 10.3. This table includes the results of our analysis for both versions of the alternative model. It also includes the results for the water and sewerage services separately and combined.

Table 10.3: Scottish Water – analysis of performance using the alternative model

	Efficiency score – England & Wales based alternative model	Efficiency score – alternative model including Scottish Water	
Water service	110	115	
Sewerage service	130	129	

We have presented the results such that the average performance in England and Wales is 100. This assessment does not take into account either special factors or any differences in the level of service provided to customers. It is interesting to note that on the water service, Scottish Water's performance appears to be slightly worse when we make the comparison using the Scottish version of the model, although its performance is similar on the sewerage service. Including information from Scottish Water in the development of the model has had an impact on the industry 'standard' size of assets and on the estimated economies of scale for each asset type. The reason this impact is less on the sewerage service is probably because we have excluded the PPP works from our analysis.⁸²

The results of this analysis would suggest that the absolute performance of Scottish Water is slightly worse when we use the alternative model, although the difference is not significant. However, our analysis focuses on Scottish Water's efficiency relative to the companies in England and Wales. Table 10.4 shows the efficiency gap between Scottish Water, the average in

⁸² The PPP sewage treatment works in Scotland treat around 45% of sewage load, so excluding these works from our analysis lessens the impact that the remaining works have upon industry standard sizes and economies of scale.

England and Wales and the two benchmark companies – Wessex Water on the water service and Yorkshire Water on the sewerage service⁸³. Table 10.4 also shows the results of our analysis using the revised Ofwat econometric models⁸⁴.

Table 10.4: Scottish Water's efficiency gap

	Efficiency gap – revised Ofwat econometric models	Efficiency gap – alternative model including Scottish Water
Average – water service	11%	13%
Wessex – water service	30%	39%
Yorkshire – water service	26%	24%
Average – sewerage service	21%	22%
Wessex – sewerage service	38%	39%
Yorkshire – sewerage service	33%	40%
Average – combined	15%	17%
Wessex – combined	33%	39%
Yorkshire – combined	29%	31%

The results set out in Table 10.4 show that Scottish Water's relative performance appears to be worse for both the water service and the sewerage service when we assess its performance using the alternative model. This is particularly true when we compare Scottish Water against Wessex Water for the water service and Yorkshire Water for the sewerage service. The difference is smaller when we look at relative performance for both water and sewerage together.

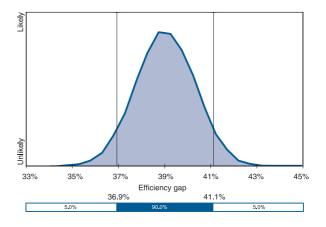
Risk analysis

We used a standard risk analysis software package to assess the effect of a change in any of our assumptions on the results calculated by the model. This analysis allowed us to check the sensitivity of our modelling to the assumptions on unit cost and economies of scale that we included in the model. We considered that this was important because some of our estimates of unit costs cannot be calculated directly from published information. Although our estimates of economies of scale are based on published information, we felt that it was important to check the effect of the values that were input to the model.

We used prudent ranges around our estimates and used a risk analysis software to assess whether changes within these ranges would have a significant impact on the size of the efficiency gap. The output from that analysis shows that the calculated efficiency gaps in the alternative model are reasonable.

Figure 10.1 shows the results of this analysis for our estimate of the efficiency gap between Scottish Water and Wessex Water, for the water and sewerage services combined. There is a 90% probability that the efficiency gap is within 2.1% of our central estimate of 39%, allowing for the uncertainties in our modelling assumptions.

Figure 10.1: Risk analysis results for the efficiency gap between Scottish Water and Wessex Water



Conclusion

In this chapter we outlined the alternative model that we have developed to assess Scottish Water's efficiency in operating expenditure relative to that of the water and sewerage companies in England and Wales. We originally developed this model for the Strategic Review of Charges 2002-06 in response to the suggestion from the Competition Commission that regulators should not rely on one method for establishing relative efficiency.

The results of our analysis using the alternative model are not materially different from those we obtained using both the Ofwat and the revised Ofwat econometric

⁸³ Ofwat identified Wessex Water and Yorkshire Water as its chosen benchmark companies in its 'Water and sewerage service unit costs and relative efficiency 2003-2004 report'.

⁸⁴ In order to show the results of the approaches on a like-for-like basis, this table does not take account of adjustments to the residuals from the econometric models.

models. The alternative model indicates that there is a significant efficiency gap of more than 30% between Scottish Water and the benchmark companies in England and Wales. The analysis we carried out using our alternative model has reassured us that the results we obtained using the econometric models are robust.

Section 3: Setting the allowed for level of operating costs

Chapter 11: Adjustments to our models for special factors

Introduction

In Chapters 8 and 9, we explained how we use benchmarking to assess Scottish Water's relative operating cost efficiency. Our approach is 'top down'. It looks at the overall level of costs that Scottish Water incurs and compares this with the costs incurred by the companies south of the border. The approach recognises that costs are influenced by the conditions in which a company operates and provides services. It measures the impact of factors that are outside the control of managers on the level of costs incurred.

It is not possible to include every factor that may have an impact on companies' costs. Even if we could identify every factor that influences a company's costs, such an approach would be impractical. The models would become too complex and many of the factors are likely to add little to our understanding.

We are keen that our analysis is as complete as possible and compares like with like. It is important, therefore, that we identify any factors (outside management control) that affect Scottish Water's operating costs (either causing them to be higher or lower) which are not included in the models. We asked Scottish Water to draw such factors to our attention.

This chapter begins by defining 'special factors' and providing an overview of the special factors that have been applied to companies south of the border. It continues by describing the criteria that we use to assess special factors. We then consider the special factors that have been advanced by Scottish Water.

Scottish Water raised a number of special factors in its June 2004 Annual Return and in its first and second draft business plans. We asked the Reporter to comment on these special factors. The chapter concludes with an outline of the special factors that we have accepted and their impact on Scottish Water's relative efficiency.

Definition of special factors

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. In particular, they question the application of Ofwat's econometric models in Scotland⁸⁵. We believe that the fact that the Ofwat models have been successfully applied to companies as different as Severn Trent Water and South West Water, and to both large and small water and sewerage companies as well as to the small water only companies, confirms that the models can reasonably be applied to Scottish Water.

Ofwat's econometric models provide a simple explanation of water and sewerage company costs. Not every factor that might determine costs is included in the models. The factors that are included are the principal cost drivers. They are relevant to explaining the costs of the companies south of the border and Scottish Water. For an individual company, it is possible that there are additional factors that are not included in the models, but which determine costs. These are known as 'special factors' because they may be relevant to just one or two companies. A special factor may increase or decrease a company's costs, although companies tend to concentrate on those that increase costs when explaining their efficiency to regulators. We take account of the special factors that are material and outside the control of management by adjusting the results of the benchmarking models.

The opportunity for a company to bring special factors to the attention of the regulator is a strength of our approach to assessing relative efficiency. This ensures that in adjusting the results of the models we have taken all reasonable steps to measure efficiency accurately. For this reason it is quite appropriate to assess Scottish Water's efficiency relative to that of the companies in England and Wales.

⁸⁵ See, for example, J Findlay 'Financing the Scottish water and sewerage industry' paper to the Scottish Trade Union Conference, April 2004.

Overview of special factors for companies in England and Wales

In order to assess the relative efficiency of the companies in England and Wales for its 2003-04 report⁸⁶, Ofwat asked the companies to submit their claims for special factors.

Table 11.1 summarises the special factors that Ofwat took into account in its assessment of relative efficiency.

Table 11.1: Successful special factors claims by companies in England and Wales

Operating expenditure

Operating expenditure	Number of companies
Water resources (including bulk supplies	9
Water quality	2
Water treatment	6
Leakage	4
High level of meter penetration	5
Sewage treatment and sludge	3
Location	
Regional salaries and construction costs	8
Regional power costs	4
Debt	5
Coastal sewage treatment works	2
Traffic congestion	2
Burst rate	2
Location (other)	2
Welsh language obligations	1
Size and number of assets (including rurality)	3
Company size (small companies)	2
Accounting for depreciation	1
Impact of large industrial customers on the econometric models	2
Total operating expenditure	63
Capital maintenance expenditure	
Shared water resources	1
Water treatment	1
Tight ammonia discharge consent	1
Number of meter replacements	1
High seasonal tourist population	1
Regional price adjustment	9
Impact of reservoir safety	1
Impact of coal mining	1
Company size (small companies)	2
M6 toll road	1
Total capital maintenance expenditure	19

Ofwat considered over 150 claims for special factors from 21 companies; just 63 were accepted.

Criteria for assessing special factors

In assessing special factors for Scottish Water we used the same approach as Ofwat. Scottish Water had to provide evidence in the following areas in order to justify a special factor⁸⁷.

- What is the justification of the special circumstances
 that demonstrate a material difference from industry
 norms? Scottish Water has to have explained how the
 special factors are the result of special obligations,
 the character of all or part of its customer base, or the
 result of historical development of the water and
 sewerage systems in its area of supply.
- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?

Scottish Water's special factors

Evidence from Scottish Water

Scottish Water provided us with three submissions, which claim that special factors result in higher operating costs than those predicted by our econometric models. The three submissions are:

- Scottish Water special factors submission, June 2004;
- special factors submitted with Scottish Water's first draft business plan, October 2004; and

Number of

⁸⁶ 'Water and sewerage service unit costs and relative efficiency 2003-04 report', Ofwat.

⁸⁷ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998, available at: www.ofwat.gov.uk.

 special factors submitted with the second draft business plan, April 2005.

Scottish Water special factors submission, June 2004

Scottish Water provided its initial evidence on special factors in its 2003-04 Annual Return. Scottish Water argued that the following special factors caused it to incur a higher level of operating expenditure than could be justified by our benchmarking.

Geographical

- Travel costs: Due to the size of Scottish Water's service area, employees working on the assets have to travel long distances. In addition, personnel from areas such as customer service and business, laboratory and contract services also have to travel extensively.
- High number of small treatment works: According
 to Scottish Water, the sparsity of the population
 requires it to operate a large number of treatment
 works in comparison with the companies south of the
 border.
- 'Flashy'⁸⁸ supplies: Scottish Water claimed that many of its treatment works deal with supplies that are difficult to treat due to the changeable nature of the raw water.
- **Electricity:** Scottish Water claimed that in some regions its operating costs are increased due to higher charges (distribution use of system charges and the tariff itself) than those incurred by the companies in England and Wales. It also claims that the use of electricity for activities other than pumping is higher in Scotland than in England and Wales and that this is not taken into account in the models.
- Sludge treatment costs: Scottish Water indicated that it had to transport sludge longer distances than is the norm in England and Wales (from small rural areas to dedicated sludge treatment centres).

Asset base

 Leakage: Scottish Water argued that it has inherited an asset base with a leakage rate that is much higher than in England and Wales. According to Scottish Water, this has an impact on its costs (due to the need to treat relatively more water per inhabitant) but the model does not take this into account.

Economic

- Household bad debt, billing and metering:
 Scottish Water argued that it has a higher level of customer bad debt than that of the companies in England and Wales. It suggests that this is largely due to factors that are outside its control.
- Purchase of materials: Scottish Water claimed that there is an additional cost when purchasing materials because most of these are purchased in England and transportation costs are significant.

Legal

- Sewer laterals: Scottish Water has a legal responsibility for lateral sewers (the drains that connect customers' properties to the main sewer). In England and Wales these are the responsibility of the customer.
- Freedom of Information Act: Scottish Water argued that it has to comply with the Freedom of Information Act whereas the privatised water and sewerage companies do not.
- Enquiries from politicians: Scottish Water argued that as a public body it receives a larger number of enquiries from politicians than the companies in England and Wales so incurs additional costs in this area.
- Removal of phosphorus and nitrates: Scottish
 Water indicated that it has to incur higher costs to
 remove phosphorus and nitrates from sewage
 effluent than the companies south of the border. This
 is due to tighter consent conditions imposed by the
 Scottish Environment Protection Agency.

^{88 &#}x27;Flashy' conditions is where a greater than or equal to a four fold change in colour in a 12 hour period can occur.

 Cryptosporidium standards: Scottish Water argued that the sampling requirement for cryptosporidium imposed by the Drinking Water Quality Regulator is greater than the sampling programmes undertaken by the water and sewerage companies. This leads to additional costs.

First draft business plan special factors submission, October 2004

We received Scottish Water's first draft business plan in October 2004. Scottish Water also provided a 'First draft special factors submission'. This set out a revised view of the special factors that might apply to Scottish Water.

The special factors suggested by Scottish Water were summarised in their business plan⁸⁹:

- inherited asset base,
- · geography and environment, and
- legal.

Scottish Water discussed each factor in turn. It repeated many of the special factors suggested in June 2004. In some cases it provided additional evidence to support particular special factors. Scottish Water also identified some new special factors and withdrew others that it now considered to be immaterial.

Inherited asset base

• Leakage: Scottish Water repeated the argument that its higher level of leakage has an impact on costs that is not taken into account by the benchmarking models. It contrasted the situation in England and Wales with the situation in Scotland. In England and Wales companies have been under pressure to cut leakage since 1995 due to resource constraints. Scottish Water argued that there has not been the same pressure in Scotland because water resources were perceived to be plentiful. Scottish Water also argued that the economic level of leakage in Scotland is high due to the low marginal cost of water.

Geography and environment

- Travel costs: Scottish Water repeated the claim that it faces additional travel costs. This reflects the sparsity and distribution of the population and of the assets.
- Service reservoirs and water towers: Scottish
 Water argued that it has proportionately far more
 service reservoirs and water towers than the average
 for companies in England and Wales. It argued that
 this reflects the sparse population distribution,
 Scotland's topography and the assets it inherited
 from the previous water authorities.
- Electricity charges: Scottish Water repeated the argument that it incurs electricity costs above those predicted by the econometric models. As in its June submission, Scottish Water argued that electricity charges are higher in Scotland and that the use of electricity for non-pumping activities is also higher. It added to these arguments the claim that population sparsity dictates that Scottish Water must have a larger number of smaller assets. These assets must be connected to the low voltage network and therefore incur higher electricity distribution costs.
- Supply of materials to rural locations: Scottish
 Water argued that chemicals and materials cost
 more to supply to rural locations as a result of
 population sparsity within Scotland and the
 increased need for a larger number of operational
 sites.
- Bad debt: Scottish Water repeated the argument that it faces a higher level of customer bad debt than the companies south of the border. It argued that because

Central regulatory laboratory: Scottish Water argued that the cost of its central regulatory laboratory is an additional operating cost that is not allowed for in the benchmarking models. This reflects the fact that in England and Wales the capital costs would be included within the current cost depreciation charge. In Scotland, the long-term financing arrangements for the laboratory mean that the cost is included within operating costs.

⁸⁹ Draft Business Plan summary available on our website.

local authorities issue bills to household customers, Scottish Water has limited control over the level of debt. It also suggested that the socio-economic makeup in Scotland makes bad debt more likely.

Legal

- Sewer laterals: Scottish Water argued that it faces an additional cost due to its legal responsibility for operating lateral sewers. This obligation is not faced by companies in England and Wales. Scottish Water argued that lateral sewers are more costly than main sewers to operate because of their small diameter, low flow and shallow depth.
- Waterworks sludge disposal: Scottish Water argued that it faces an additional cost due to the need to dispose of waterworks sludge to landfill rather than farmland. Scottish Water explained that it is not exempt from the Waste Management Licensing Regulations, unlike the companies in England and Wales.
- Enquiries from politicians: Scottish Water repeated the argument that its status as a public body leads to a larger number of enquiries by politicians than the companies in England and Wales.
- Cryptosporidium: Scottish Water repeated the argument that the sampling regime for cryptosporidium imposed by the Drinking Water Quality Regulator is more costly than the sampling regime imposed on the water and sewerage companies south of the border. This leads to additional costs.

Factors no longer included or given reduced importance

In its first draft business plan Scottish Water explained that it had undertaken further analysis and now considered the following factors to be insufficiently material to be considered:

 the additional costs associated with the high number of small treatment works:

- the additional costs associated with sludge treatment; and
- the costs for removing phosphorus and nitrates.

In addition, Scottish Water indicated that the following factors may not be as significant as it had originally thought and that it would review their significance before the second draft business plan:

- the 'Flashy' nature of water supplies in Scotland; and
- the Freedom of Information Act.

Second draft business plan special factors submission, October 2004

Scottish Water further revised and developed its claim for special factors in its second draft business plan. There were no changes to the operating expenditure special factors. Scottish Water did propose two new special factors that affected its level of capital maintenance expenditure. These special factors related to water resources and treatment, and service reservoirs.

Capital maintenance special factors

- Water resources and treatment: Scottish Water stated that due to the geography and number of remote communities in Scotland, it has to maintain a larger number of water resource and treatment assets per property than the companies in England and Wales. The profile of water resources is also different, with fewer groundwater sources in Scotland and more aqueducts, water treatment works, boreholes, river intakes and dams/impounding reservoirs. Scottish Water argued that the econometric models do not take into account the number and type of water resource and treatment assets, and that the form of the econometric models puts them at a disadvantage relative to the companies in England and Wales.
- Service reservoirs: Scottish Water stated that there are significantly more service reservoirs and water towers in Scotland than in England and Wales. They

argued that this is primarily the result of the sparsity of population, but is also influenced by topography. Scottish Water argued that whereas the capital maintenance expenditure model determines cost on the basis of total service reservoir volume, it is more appropriate to consider the number of service reservoirs and their surface area.

The second draft business plan also details other areas of capital expenditure where Scottish Water believes, but is currently unable to quantify, that a special factor may be appropriate. These areas are:

- bursts and leakage,
- membrane plants, and
- phosphorous and nitrates removal.

The cost of special factors claimed by Scottish Water

Scottish Water assessed the impact, in 2003-04 prices, of the special factors that it has proposed. Scottish Water's assessment of the impact of special factors on its benchmarked annual operating expenditure changed only marginally between the first and second draft business plans. This is shown in Table 11.2.

Table 11.2: The annual financial impact of special factors (2003-04 prices)⁹⁰

Special factor	First draft business plan - October 2004	Second draft business plan - April 2005
OPERATING EXPENDITURE		
Inherited asset base		
Leakage	£7.8m	£9.8m
Central regulatory laboratory	£0.7m	£0.7m
Geography and environment	•	
Travel costs	£16.8m	£11.4m
Service reservoirs and water towers	£1.9m	£2.1m
Electricity	£4.6m	£4.7m
Supply of materials to rural locations	£0.5m	£0.5m
Bad debt	£7.8m	£7.3m
Legal	•	
Sewer laterals	£10.0m	£11.7m
Waterworks sludge disposal	£2.3m	£2.3m
Political queries	£0.3m	£0.3m
Cryptosporidium	£1.7m	£2.0m
Operating expenditure total	£54.4m	£52.7m
CAPITAL MAINTENANCE EXPENDITURE		
Water resources and treatment	-	£17.4m
Service reservoirs	-	£1.0m
Capital maintenance total	-	£18.4m
TOTAL	£54.4m	£71.1m

In October 2004, Scottish Water estimated that it had to incur additional annual operating costs of £54.4 million. In April 2005 this estimate was revised downwards to £52.7 million. The second draft business plan advanced a claim for a further £18.4 million of annual capital maintenance expenditure due to special factors.

Our response to the special factors raised by Scottish Water

Scottish Water has claimed that there are 11 special factors which increase its operating costs and which are not taken into account by the econometric models. It has also claimed that there are two special factors that increase its capital maintenance costs. We reviewed each of these special factors in detail. We summarise our views below.

⁹⁰ Totals may not add exactly, due to rounding

Inherited asset base

Scottish Water included two special factors that relate to the asset base it inherited. Each year we publish an Investment and Asset Management Report which examines Scottish Water's investment performance (and formerly that of the three water authorities). We have published two Investment and Asset Management Reports⁹¹. The first covered the three former water authorities and the second looked at Scottish Water's performance. These reports considered historic investment in Scotland and looks at the condition and performance of Scottish Water's assets. The reports have shown that investment levels per property in Scotland have been broadly similar to those in England and Wales over the medium term. We have assessed Scottish Water's claims against this background.

Scottish Water has claimed that an allowance should be made for the higher levels of leakage that occur in Scotland. However, Scottish Water and the former authorities have been under sustained regulatory pressure to identify the true scale of leakage in Scotland and to reduce leakage levels⁹². We do not accept that the current level of leakage can properly be regarded as a factor that is outside managerial control.

Scottish Water has also claimed that leakage in Scotland is high because water resources are perceived to be plentiful in Scotland. It argues that the marginal cost of leaking water is low. We are not persuaded that the marginal cost of leaking water is low in Scotland. We note, however, that if the marginal cost of water was low and Scottish Water was at its economic level of leakage, then Scottish Water would certainly not be disadvantaged by the econometric model.

The second special factor associated with the inherited asset base relates to the 'central regulatory laboratory'. We accept that the capital costs of the central laboratory should be re-categorised as capital maintenance for the purposes of the benchmarking exercise.

Geography and environment

The first draft business plan extended the arguments made in the June 2004 Annual Return concerning population density. Population density continued to play a central role in the second draft business plan. Scottish Water made the following key points.

- The average population density for the whole of England and Wales is 3.46 persons per hectare, which is more than 5.3 times greater than that of Scottish Water.
- Scotland has a total population density that is less than half that of any of the water and sewerage companies in England and Wales.
- The North West operational area of Scotland is completely rural – 46% of the total area served by Scottish Water is in the North West operational area, but only 7% of the population.

Three of the 11 special factors for operating costs raised by Scottish Water relate to population density. Scottish Water has argued that low population density increases its direct operating costs, in particular travel costs and the operation of service reservoirs and water towers. It also argued that low population density increases its indirect operating costs by raising the costs of materials supplies to rural locations.

We are not persuaded by these arguments for two reasons. First, there are a number of companies in England and Wales with a similar population density. Ofwat makes no adjustment to the modelled efficiency scores of these companies. Second, there is an offsetting travel cost effect associated with a dispersed population. While dispersion may increase the average length of a journey, it is also likely to be associated with a reduction in congestion. A comparatively long journey in a sparsely populated area may be much quicker than a comparatively short journey in a large urban area. Table 11.1 reported that where Ofwat has made an adjustment for travel costs it has reflected congestion rather than dispersion.

^{91 &#}x27;Investment and Asset Management Report 2000-2002', March 2003, and 'Investment and Asset Management Report 2002-2003', April 2004.

⁹² In WIC 24, dated December 2001, we first asked the Scottish water industry to provide us with a leakage strategy.

Our analysis found that Scottish Water has not demonstrated that its portfolio of service reservoirs and water towers leads to costs that are not recognised by the models. We accept that Scottish Water may incur modestly higher travel costs and have allowed £6.55 million as a special factor.

Scottish Water has also claimed that it faces higher electricity charges than those faced by the companies in England and Wales. We accept that there are higher electricity charges in Scotland, but believe that Scottish Water has overestimated the differential. In a number of cases there are opportunities to offset the higher charges with cost savings. For example, there are opportunities to reduce leakage and so save electricity costs. Additionally Scottish Water may benefit from the introduction of the new electricity trading arrangements to Scotland. Given that these new arrangements may substantially reduce transmission charges in Scotland, we expect the new Commission may wish to revisit whether any uplift is justifiable in the final determination.

Finally, in the category of geography and environment, Scottish Water has argued that it is penalised by a high level of bad debt for domestic customers. Scottish Water has argued that this bad debt is outside managerial control. We believe that Scottish Water has the opportunity to exert control over the level of bad debt through the service level agreements negotiated with local authorities. Scottish Water has taken this approach with nine of the 32 local authorities in Scotland, but we believe that there is scope for further extending such agreements. It is also important to consider the overall cost of issuing bills, collecting money and the resulting bad debt. When we take all of these factors into account, we are not persuaded that Scottish Water is disadvantaged to the extent that it has argued. We do accept that Scottish Water incurs additional costs for bad debt and have allowed £2.6 million as a special factor.

Legal

Scottish Water has included four special factors relating to different legal requirements in Scotland.

Scotland has adopted broadly the same framework for regulating the water and waste water industry that exists

in England and Wales. The legal requirements faced by Scottish Water are also broadly the same as those faced by companies in England and Wales. This reflects the importance of European legislation. However, Scottish Water has claimed that there are a number of specific differences that are not reflected in the benchmarking models. We accept that an adjustment should be made to reflect the different legal obligations faced by Scottish Water in relation to sewer laterals and waterworks sludge disposal.

We have reviewed Scottish Water's claim that it faces higher costs because of the sampling regime for cryptosporidium imposed by the Drinking Water Quality Regulator. While we accept that the regime in Scotland will require Scottish Water to increase the number of samples that it takes, we do not accept that this will lead to costs that are outside the observed range of costs in England and Wales. The number of water samples taken and analysed by Scottish Water in 2003-04 was considerably less than a typical company and there is no evidence that increased sampling in Scotland would disadvantage Scottish Water. We have therefore not allowed this special factor claim.

Scottish Water has claimed that it faces a large number of enquiries by politicians compared with the privatised industry south of the border, and that this leads to additional costs. Scottish Water does not seem to have recognised the extent of the costs that are incurred by a privatised company in dealing with shareholders, multiple debt providers and credit rating agencies. We consider that managing external relations is a task that all companies must undertake and that Scottish Water does not face exceptional costs in this area.

Other

We have allowed Scottish Water a special factor of £0.8 million for the efficient costs of operating public septic tanks. There are more than 1,200 of these in Scotland, but very few exist in England and Wales. Scottish Water did not claim for any such special factor.

Capital maintenance

Population dispersion lies behind both of the special factors for capital maintenance costs. Scottish Water claims that it must maintain a larger number of water resource and treatment assets per connected property and a larger number of service reservoirs per connected property than companies in England and Wales. Our analysis shows that Scottish Water maintains a greater number of water assets per connected property than the average for England and Wales. However, the number of assets per connected property lies within the range for England and Wales. In the case of service reservoirs, we note that Scottish Water maintains a greater storage capacity per head of population, suggesting that rationalisation may be possible as leakage is reduced.

Scottish Water also argues that it maintains a different mix of water resource assets, and that this is not taken into account in the econometric models. However, Scottish Water provides no evidence of different capital maintenance needs associated with the different mix of assets.

Table 11.3: Summary of our response to special factors

Special factor	Our response	Allowance made
OPERATING EXPENDITURE		
Inherited asset base		
Leakage	No allowance	
Central regulatory laboratory	Re-categorisation of central regulatory laboratory costs	£0.7m
Geography and environment		
Travel costs (including supply of materials to rural locations	Partial allowance	£6.5m
Service reservoirs and water towers	No allowance	
Electricity	Partial allowance	£2.0m
Bad debt	Partial allowance	£2.6m
Legal		
Sewer laterals	Partial allowance	£3.9m
Waterworks sludge disposal	Partial allowance	£0.9m
Political queries	No allowance	
Cryptosporidium	No allowance	
Other		
Public septic tanks	Partial allowance	£0.8m
Operating expenditure total allowance		
CAPITAL MAINTENANCE EXPENDITURE		
Water resources and treatment	No allowance	
Service reservoirs	No allowance	
Capital maintenance total allowance		
TOTAL ALLOWANCE		£17.4m

Summary

We are keen to ensure that our analysis of the relative efficiency neither advantages nor disadvantages Scottish Water. We have analysed carefully the evidence on special factors presented by Scottish Water.

This chapter has summarised the claims made by Scottish Water and our response. We have found that some of the claims for special factors either are not material or are not outside managerial control. However, we have accepted some of the special factors that Scottish Water identified and have made appropriate adjustments to our benchmarking.

We have found no evidence to support the claim for an adjustment to benchmarked capital maintenance costs. In the case of operating expenditure, benchmarked costs have been adjusted by £17.4 million a year in 2003-04 prices.

Section 3: Setting the allowed for level of operating costs

Chapter 12: Adjustments for differences in the scope of activities

Introduction

In order to make an accurate assessment of Scottish Water's efficiency relative to that of the companies south of the border, we need to take account not only of special factors but also of the scope of activities that Scottish Water undertakes and the level of service it provides. In the previous chapter we considered a number of special factors that may influence the costs incurred by Scottish Water. In this chapter we consider differences in the scope of activities that Scottish Water must undertake.

Scottish Water is owned by the Scottish Executive and, unlike the companies in England and Wales, operates in the public sector. This has implications for the way that Scottish Water operates. For example, the Scottish Executive has made a policy decision that household customers should pay for their water and sewerage service according to the Council Tax band of their property. Metering of household customers is much less common in Scotland than in England and Wales.

Scottish Water is also subject to a different legal framework than the companies in England and Wales. The Scottish legal framework defines the activities that Scottish Water is and is not obliged to carry out. In this chapter we focus on the legal differences that narrow the scope of activities that Scottish Water has to deliver. In the previous chapter we also considered the legal differences that might widen the scope of activities that Scottish Water has to deliver.

In this chapter we outline the adjustments we have made to the allowed for level of operating expenditure to take account of differences in the scope of activities. We describe the differences and our reasons for making the adjustments. The chapter concludes with a summary of the effect of these adjustments on the level of operating expenditure that we have allowed for.

Differences in the scope of activities

Our approach at the Strategic Review of Charges 2002-06

In the Strategic Review of Charges 2002-06, we took a conservative approach to determining the relative operating cost efficiency of the three former water authorities. In particular, we did not take full account of differences in the scope of activities that is carried out by the companies south of the border, nor did we take account of the levels of service provided to customers. Our targets did not seek to quantify the additional costs incurred by the companies south of the border in providing these extra activities or enhanced levels of service.

At that time we had only just begun to collect information from the three authorities and we were not able to draw robust conclusions about the cost benefit of a reduced scope of activities in Scotland. In effect, we overstated the relative efficiency of Scottish Water because we were unable to define fully the differences in scope.

Our approach at this Review

In England and Wales the companies provide a broadly equivalent level of service to their customers. The scope of activity each company provides is also comparable. In general, therefore, Ofwat does not have to adjust the result of its models to reflect any differences in the scope of activities or the level of service between companies.

In Scotland, by contrast, the scope of activities and the levels of service provided to customers is different from that provided in England and Wales. Such differences matter to customers, impacting not only on the service they receive, but also on the prices they pay.

We now have much better information about Scottish Water's activities and about the quality of service it provides. In this draft determination we have taken

account of both of these factors in assessing the scope for improvement in Scottish Water's efficiency. We discuss how we have had to take account of differences in the level of service to customers in the next chapter.

The scope of Scottish Water's activities is in large part a function of the history of the water and waste water industry in Scotland. In essence, the industry differs from that in England and Wales in the following ways.

Activities where the scope of activity in Scotland is greater

- Scottish Water is responsible for lateral sewers (sewer pipes connecting properties to main sewers).
 In England and Wales most lateral sewers are the responsibility of customers.
- Scottish Water is responsible for public septic tanks.
 These are common in Scotland but rare in England and Wales.

Activities where the scope of activities in Scotland is smaller

- Around one-quarter of all households in England and Wales are metered, compared with around only 0.03% in Scotland, thus adding to the cost of support activities such as meter reading.
- Sophisticated water treatment processes to remove agricultural nitrate and pesticide pollution are much more commonly required in England and Wales than in Scotland.
- Companies in England and Wales have to maintain leakage at specified, economic levels. There are currently no leakage targets in Scotland.
- Companies in England and Wales have a legal duty to promote the efficient use of water by customers, whereas there is no such duty in Scotland.
- Reporters are used in Scotland and in England and Wales to scrutinise the regulatory returns. In Scotland the Scottish Executive pays for the Reporter. In England and Wales the companies meet these costs.

There are other differences that affect the scope of activities, such as major differences in population density and topography. However, we believe that our benchmarking analysis takes account of most, if not all, of these differences.

Approach to differences in scope

In Volume 4 of our methodology consultation, we consulted on seven different approaches we might use to take account of differences in the scope of activities carried out by Scottish Water⁹³. We assessed each approach on: the availability of information; its accuracy and reliability; and its cost. Following our consultation we have decided to use company information to place a monetary value on the difference in levels of service and scope of activities. This was Option 1 in the consultation.

We selected this approach because we were able to identify reliable information from the industry south of the border on the costs of specific activities⁹⁴.

Our chosen approach did not require us to adjust Scottish Water's reported operating expenditure. We assessed the extent to which the costs of the comparator companies in England and Wales would reduce if they did not carry out certain activities. We considered each activity individually and deducted the appropriate costs from the modelled operating expenditure of the companies south of the border.

In this chapter we present our analysis of the impact of the scope of activities on Yorkshire Water, one of our two leading comparator companies. This analysis illustrates the effect of differences in the scope of activities between Scottish Water and Yorkshire Water on our assessment of Scottish Water's efficiency gap in 2003-04 (our base year)⁹⁵. Specifically, for each activity where there is a difference in scope between England and Wales and Scotland we have:

- quantified the difference in scope for the particular activity;
- considered any information on the costs of the activity that is published by Ofwat, the companies in

³³ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency' (October 2004), pp. 92-93.

^{94 &#}x27;Our adjustment for Reporter costs relied solely on information from the Scottish industry'

⁹⁵ We have also examined the impact on Wessex Water, the other leading comparator company.

England and Wales, Scottish Water and any other sources;

- considered whether there are any counter arguments or mitigating costs that would render the difference in scope immaterial; and
- modelled the reduction in costs that would occur if Yorkshire Water did not perform the activity.

We describe each adjustment below.

Metering

We have made two separate adjustments to costs for differences in the level of metering between Scotland and England and Wales. The first adjustment was for household metering, the second was for non-household metering.

Household metering

Household metering is much more prevalent in England and Wales than in Scotland⁹⁶. Since 1999, the water companies in England and Wales have had a statutory duty to install meters free of charge for any household customers who request a meter⁹⁷. The meters installed in households in England and Wales represent a capital cost to the companies. However, operating costs are incurred through support activities such as meter reading.

Very few of Scottish Water's household customers are metered. In 2003-04, 0.03% of water customers and 0.01% of waste water customers were metered⁹⁸. This compares with an industry average of almost a quarter of household customers in England and Wales. Yorkshire Water metered 25.1% of its household customers for water and 24.8% for waste water.

In 2003, Ofwat calculated that the annual operating cost for a household meter was £4 per year per service⁹⁹. We have used this cost to calculate the reduction in Yorkshire Water's modelled operating expenditure if it

metered only 0.03% of its household water customers and 0.01% of its household sewerage customers. For each service, we calculated the annual operating cost associated with this estimated number of meters.

Table 12.1: Adjustment to Yorkshire Water's modelled operating costs for household metering

Water	£
Cost of operating at Yorkshire number of meters	1,886,520
Cost of operating at Scotland number of meters	2,250
Difference	1,884,270
Waste water	
Cost of operating at Yorkshire number of meters	1,876,800
Cost of operating at Scotland number of meters	757
Difference	1,876,043

We therefore reduced Yorkshire Water's operating expenditure for 2003-04 by:

- £1.9 million for water: and
- £1.9 million for waste water.

Scotland is expected to continue to have low levels of household metering in the period to 2010. We have therefore applied this adjustment in setting the allowed for level of operating expenditure for the period 2006-10.

Non-household metering

A larger proportion of Scottish Water's non-household customers have meters, although this is still much lower than the proportion served in this way by Yorkshire Water. In 2003-04, 58.6% of Scottish Water's non-household water customers, and 51.5% of Scottish Water's non-household waste water customers were metered. Yorkshire Water, in contrast, had 85.3% and 80.3% of non-household water and waste water customers respectively.

In 'Paying for water services 2006-2012: A consultation on the principles of charging for water services', the Scottish Executive indicated its intention that Scottish Water

⁹⁶ The Water Act 1989 established a prohibition on the use of rateable value as a basis for charging.

⁹⁷ See Water Industry Act 1999. Under the provisions of the Act, companies can only refuse to install a meter where it would cost more than reasonable expense to do so.

⁹⁸ Measured waste water customers do not usually have an effluent meter; instead, their waste water charge is based on their water meter.

See RD 30/03, 'Measured/unmeasured tariff differential', Ofwat, 22 August 2003.

should move to full metering of non-household customers over the next few years. As a result, we expect the number of non-household customers who are metered to increase over the coming regulatory control period.

Operating costs for non-household meters are generally higher than those for household meters. This is because non-household customers with large consumption may require more than one meter to be installed and for these meters to be read more frequently. In its second draft business plan, Scottish Water proposed full metering of all non-household customers. It stated that this would add £1.1 million to operating expenditure in 2009-10100. In 2003-04, 138,700 non-household customers of Scottish Water were unmeasured for water or waste water services. This implies an operating cost of £8.17 per metered service (water or waste water). We have used this figure to calculate the reduction in Yorkshire Water's modelled operating costs if it had the same proportion of nonhousehold metered customers as Scottish Water in 2003-04. The results of this analysis are outlined in Table 12.2.

Table 12.2: Adjustment to Yorkshire Water's level of operating costs for non-household metering

Water	£	% of customers
Cost of operating at Yorkshire number of meters	923,210	85.3%
Cost of operating at Scotland number of meters	634,360	58.6%
Difference	288,850	26.7%
Waste water		
Cost of operating at Yorkshire number of meters	741,836	81.1%
Cost of operating at Scotland number of meters	475,453	52.0%
Difference	266,383	29.1%

We have therefore reduced Yorkshire Water's modelled operating costs by:

- £0.3 million for water; and
- £0.3 million for waste water.

In its second draft business plan, Scottish Water aims to meter all non-household customers by 2010. However, it is proposing not to charge on a metered basis until 2010-11 and therefore will not incur the costs of meter reading and billing. We have therefore applied this adjustment in setting the allowed for level of operating expenditure for the period 2006-10.

Nitrate and pesticide removal

In England and Wales, intensive farming methods have resulted in the pollution of watercourses with nitrates and pesticides. In order to meet water quality standards, water companies incur greater treatment costs to remove these pollutants. We understand that there are far fewer incidences of such pollution in Scotland.

In 2003-04, the industry in England and Wales as a whole incurred total additional operating expenditure of £35.3 million to remove nitrates and pesticides¹⁰¹. For Yorkshire Water, the cost in 2003-04 was £1.6 million. Scottish Water did not report any additional treatment costs for nitrates and pesticides in 2003-04.

We have therefore deducted £1.6 million from Yorkshire Water's modelled operating expenditure.

Scottish Water has previously indicated to us that it believes that its small rural water sources exhibit 'flashy'¹⁰² conditions. Although this may be more common in Scotland, Scottish Water did not submit a special factor claim for any additional treatment costs resulting from these unusual conditions.

We have therefore assumed that any additional costs incurred are immaterial and do not require an adjustment to be made.

Leakage

Leakage is an issue common to the industries both sides of the border. In England and Wales, the water and waste water companies are required to keep leakage at an economic level. Since 1998-99, Ofwat has set mandatory leakage targets for the companies. In Scotland, no such requirement currently exists. This difference is reflected in the approaches taken to tackling leakage by Scottish Water and by the companies.

¹⁰⁰ At 2003-04 prices. Scottish Water stated that it intended to read and service meters during 2009-10 but to only start billing these properties on a volumetric basis from 2010-11.

¹⁰¹ Ofwat June Return 2004 for 1997-98 to 2003-04 and ERM, 'Assessing current levels of cost recovery and incentive pricing', Report to DEFRA, 2004.

¹⁰² 'Flashy' conditions is where a greater than or equal to a four fold change in a 120 hour period can occur.

- Scottish Water reported that it adopted a passive leakage control policy in 2003-04. This means it reacted to and repaired bursts as they occurred.
- Companies in England and Wales adopt active leakage control polices. They proactively seek out leaks and repair them as a preventative measure. They also practice passive control policies and respond to bursts when required.

All companies regard passive leakage control as an operating cost. However, it is not as straightforward to allocate active leakage control costs. Active leakage control can involve extensive improvement or upgrade to the network and can therefore be classified as a capital cost. Some of these costs are classified as operating expenditure because they are incurred in maintaining the operational performance of the network.

In practice, the companies in England and Wales divide their active leakage control costs between operating and capital expenditure. Ofwat scrutinises this allocation and compares company accounts to ensure that cost allocation has been made on a consistent basis between companies. Where necessary, Ofwat will make adjustments to this allocation.

In 2003-04, Ofwat made such an adjustment to Yorkshire Water's costs. It reallocated £6.8 million of leakage control costs to operating expenditure. We have therefore assumed that, as a minimum, Yorkshire Water spent £6.8 million on active leakage control.

We have deducted £6.8 million from Yorkshire Water's modelled operating costs in order to take account of differing leakage control policies.

In its second draft business plan, Scottish Water states that tackling leakage will lead to a slight reduction in operating costs. We have allowed £40 million of capital investment to enable Scottish Water to reduce leakage. We have therefore assumed that Scottish Water will not require additional operating expenditure to tackle leakage, and we have applied this adjustment in setting the allowed for level of operating expenditure for the period to 2010.

Legal duty to promote efficient water use

The Water Industry Act 1991¹⁰³ requires the water companies in England and Wales to encourage their customers to use water efficiently. Ofwat enforces this provision by requiring the companies to submit water efficiency plans. These plans detail the steps the companies intend to take to promote more efficient water use. There is no such legal duty on Scottish Water.

In 2003-04, the water industry in England and Wales as a whole spent £6.3 million of operating expenditure on promoting efficient water use¹⁰⁴. While we recognise that this represents a cost burden on the English and Welsh industry that is not taken account of in our benchmarking, the additional costs borne by Yorkshire Water in 2003-04 were only £64,200. This amount is not material to our analysis, and we have not applied an adjustment.

We have therefore not deducted the cost of promoting efficient water use from Yorkshire Water's modelled operating costs.

Reporter costs

There are two types of Reporter costs:

- external costs, which are the contract costs of paying the Reporter and his/her team for their time, skills and expenses; and
- internal costs, which are incurred by the regulated company in dedicating staff and resources to liase with Reporters.

External costs

In England and Wales, water and waste water companies pay the costs of their Reporters themselves. The cost is reported as part of each company's annual operating expenditure. In Scotland, this Office meets the external costs of Reporters through a grant from the Scottish Executive¹⁰⁵. There is therefore no impact on Scottish Water's operating expenditure.

¹⁰³ Section 93a.

Taken from the relevant water efficiency plans.

¹⁰⁵ This arrangement was agreed as Principle 4 of the Ten principles, which were agreed between the Scottish Executive, Scottish Water and this Office. See Volume 2 of our methodology consultation, 'Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10', p84.

In 2003-04, annual external Reporter costs in Scotland were £0.3 million. We have assumed that these costs are approximately the same as would be incurred by a company in England and Wales. It is possible that this assumption understates actual Reporter costs in England and Wales. It is likely that the costs faced by the companies south of the border were higher in 2003-04 since this was the base year for Ofwat's 2005-10 price determination. The Reporter undertakes extra work in scrutinising business plans in the run-up to a price determination.

We have assumed a 50:50 apportionment of these costs between water and waste water. We have therefore reduced Yorkshire Water's modelled operating expenditure by £0.15 million for water and £0.15 million for waste water.

The arrangements for funding the work of the Reporter are set to change in 2006, with costs being borne by Scottish Water. We have therefore allowed an additional £0.3 million per year in Scottish Water's baseline from 2006-07.

Internal costs

Reporters require access to members of staff, additional information and support services from the regulated company. Dedicating additional staff and resources to assist Reporters can increase operating costs. We do not think that there is likely to have been any material difference between the costs incurred by Yorkshire Water and those incurred by Scottish Water.

We have therefore made no adjustment to Yorkshire Water's modelled operating costs for internal Reporter costs.

Overall adjustments to allowed operating costs

In the previous chapter we took account of special factors that are outside the control of Scottish Water's management and justifiably increase Scottish Water's operating expenditure. This reduced the scope for improvement in efficiency.

The adjustments to reflect differences in the scope of activities have reduced Yorkshire Water's modelled operating costs. Scottish Water's operating costs appear higher in comparison. This widens the efficiency gap, and suggests that there is greater scope for efficiency.

Our analysis of differences in the scope of activities enables us to draw more accurate conclusions about Scottish Water's relative performance. In Tables 12.3 and 12.4 we summarise the adjustments we have made to reflect differences in scope.

Table 12.3: Summary of adjustments to the allowed for level of operating expenditure to reflect differences in the scope of activities for the water service¹⁰⁶

Water activity	Effect on Scottish Water's allowed operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Leakage	Decrease	£6.8m
Nitrate removal	Decrease	£1.6m
Legal duty to promote efficient water use	None	Immaterial
Reporter costs	Decrease	£0.15m
Total	Decrease	£10.8m

Table 12.4: Summary of adjustments to the allowed for level of operating expenditure to reflect differences in the scope of activities for the waste water service¹⁰⁷

Waste water activity	Effect on Scottish Water's allowed operating costs	Value of adjustment to Yorkshire Water's operating costs
Household metering	Decrease	£1.9m
Non-household metering	Decrease	£0.3m
Reporter costs	Decrease	£0.15m
Total	Decrease	£2.3m

In the previous chapter, which discussed special factors, we allowed for the extra costs that Scottish Water incurs in dealing with lateral sewers and public septic tanks.

Our adjustments for scope of activities affect Yorkshire Water's modelled operating expenditure as follows:

¹⁰⁶ Totals may not add exactly due to rounding.

¹⁰⁷ Totals may not add exactly, due to rounding.

Water service

Modelled operating expenditure 108 = £91.3m LESS net adjustments for scope = £10.8m Implied Yorkshire Water operating expenditure = £80.6m

The adjustment represents approximately 12% of Yorkshire Water's modelled water operating cost¹⁰⁹.

Waste water service

Modelled operating expenditure = £85.1m

LESS net adjustments for scope = £2.3m

Implied Yorkshire Water

operating expenditure = £82.8m

The adjustment represents approximately 3% of Yorkshire Water's modelled waste water operating cost¹¹⁰.

We calculated the adjustment to the operating costs of Yorkshire Water in 2003-04 that is required to account for these differences. We assume that the differences in scope, with the exception of Reporter costs, will continue throughout the review period.

Table 12.5: Summary of adjustments to Yorkshire Water's modelled operating cost for differences in the scope of activities

	Adjustment to modelled operating cost	
Water	10.8	
Waste water	2.3	
Total	13.1	

Conclusion

It is important that we take account of special factors and differences in the scope of activities. This helps us to ensure that we are comparing like-for-like and provides a more complete assessment of Scottish Water's relative operating cost efficiency.

In this chapter we recognised that differences in the scope of activities increase the costs borne by the companies in England and Wales.

We have reviewed the scope of activities performed by Scottish Water and the companies south of the border. This analysis has led us to conclude that we should reduce the modelled operating cost of Scottish Water's comparator companies, Wessex Water and Yorkshire Water. This has the effect on the efficiency gap as shown in Table 12.6. In our base year, 2003-04, these adjustments resulted in an efficiency gap of 32% for the water service and 24% for the waste water service.

Table 12.6: Summary of the impact of special factors and differences in scope of activities on Scottish Water's efficiency gap

	Water ¹¹¹	Waste water ¹¹²	
Initial gap	27%	28%	
Gap after adjustments for special factors	25%	23%	
Gap after adjustments for scope	32%	24%	

¹⁰⁸ The derivation of modelled operating expenditure is set out in Chapter 6.

¹⁰⁹ The corresponding analysis for Wessex Water shows a reduction of 11%. This is a conservative estimate, as our analysis does not take account of the limited economies of scale and scope for metering that are available to Wessex Water, the smallest of the water and sewerage companies.

¹¹⁰ The corresponding analysis for Wessex Water also shows a reduction of 3%. This is a conservative estimate, as our analysis does not take account of the limited economies of scale and scope for metering that are available to Wessex Water, the smallest of the water and sewerage companies.

¹¹¹ The water service gap is with respect to Wessex Water.

¹¹² The waste water service gap is with respect to Yorkshire Water.

Section 3: Setting the allowed for level of operating costs

Chapter 13: The level of service provided by Scottish Water

Introduction

It is essential that Scottish Water does not seek to live within its charge cap by reducing the level of service it provides to customers. In this chapter we review the levels of service provided by Scottish Water in 2003-04 and compare these with the levels of service provided by the companies in England and Wales. We then set out the levels of service that we expect Scottish Water to achieve during the regulatory control period. Achieving this level of service is an important part of the regulatory contract.

Regulating levels of service in Scotland

In our methodology consultation, we sought stakeholders' views about how we should take the levels of service provided by Scottish Water into account when we set maximum charges. We plan to use benchmarking to monitor the level of customer service provided by Scottish Water. We can use the framework developed by Ofwat, and information from the companies south of the border, to monitor both Scottish Water's absolute and relative performance.

In our guidance for the second draft business plan, we asked Scottish Water to provide estimates of the operating expenditure that it would require to improve its levels of service to that of the average performance of the companies in England and Wales. We planned to use these estimates to adjust Scottish Water's operating expenditure and make a more accurate assessment of the efficiency gap relative to the companies south of the border. Clearly, if Scottish Water required more operating expenditure to match levels of service achieved south of the border, this would imply that the operating expenditure efficiency gap in 2003-04 would be greater than that calculated by the econometric models.

Unfortunately, Scottish Water did not provide this information, and we have not been able to adjust our estimate of the efficiency gap in 2003-04. We therefore

expect Scottish Water to make significant progress in the level of service that it provides to customers. Our allowed for level of operating costs includes the costs of the enhanced level of service that the companies provide to their customers.

Since Scottish Water did not provide the information that we required, we have had to adjust our approach. We have set clear milestones for improvement in the level of service provided to customers. It is important that Scottish Water achieves these milestones.

We have therefore opted not to adjust our calculation of the scope for efficiency to reflect the difference in levels of service.

Measuring levels of customer service

Our methodology consultation explained how we monitor and report on the levels of service provided by Scottish Water. We set out the following information in our annual Customer Service Report:

- Scottish Water's overall performance assessment (OPA) score – this is a single measure of performance that combines a number of separate measures of performance;
- Scottish Water's performance on each of the measures included in the OPA (provided Scottish Water collects the necessary information); and
- Scottish Water's performance on the measures for which it publishes a Guaranteed Minimum Standard (GMS).

The overall performance assessment

We use the OPA, which was developed by Ofwat, to measure the performance of Scottish Water. This allows us to compare the performance of Scottish Water with that of the companies in England and Wales. The OPA takes account of performance across a range of

¹¹³ Ofwat's approach to the OPA is set out in 'Linking service levels to prices'.

activities that affect the level of service provided to customers.

To calculate the OPA score, we convert the company's performance in each service area to a score out of 50 points¹¹⁴. The better a company's performance, the higher the score it receives. For each measure and for each company, we define the maximum and minimum performance (based on the company's performance for the measure in previous years). If a company's performance is better than the maximum, it will receive a score of 50 points. Performance below the minimum receives a score of 5 points.

Once all of the individual customer service measures have been converted to scores out of 50, they are weighted according to the importance of each measure to customers. These weightings were assessed based on market research¹¹⁵.

Scottish Water's response to our second open letter¹¹⁶ suggested a misunderstanding of the way that the OPA is calculated. Scottish Water stated "OPA scores will vary from year-to-year based on relative performance with the water companies in England and Wales". In fact, Scottish Water's OPA score will vary from year-to-year over the regulatory control period only in response to changes in Scottish Water's own customer service performance. The performance of the comparator companies in England and Wales will have no effect on Scottish Water's OPA score.

For each component of the OPA, Scottish Water's performance is measured against a possible 'best' and 'worst' performance that were set out by Ofwat in 'Linking service levels to prices' (February 2002). This allows us to assess Scottish Water's current performance and to determine milestones for future performance on a consistent basis. When we compare Scottish Water's actual performance during this regulatory control period we will use the same baseline. This allows us to measure both Scottish Water's absolute and relative customer service performance.

Individual performance measures

The overall performance assessment depends on each company's performance in each of fifteen individual performance measures. We can also compare performance for each individual measure. The individual measures are outlined below¹¹⁷.

Inadequate pressure

Customers expect their supplier to provide a supply of water at a pressure that is sufficient for their needs. The assessment used for this measure of service is the percentage of connected properties at risk of receiving pressure below the reference level. At the reference level pressure, a 9-litre bucket should be filled within one minute.

Scottish Water collects information on inadequate pressure. We can therefore compare Scottish Water's performance with that of the companies south of the border.

Supply interruptions

From time to time incidents on the network, such as a burst water main, can mean that customers temporarily lose their water supply. This assessment is based on the number of properties experiencing unplanned supply interruptions in excess of 6, 12 and 24 hours. Interruptions lasting longer than 24 hours are given a double weighting.

We now receive information from Scottish Water that allows us to compare performance with the companies south of the border.

Hosepipe restrictions

Hosepipe restrictions are an indicator of how secure the supply is. This assessment is based on the average number of person weeks of hosepipe restrictions imposed over the most recent five-year period. Restrictions for each of the five years are weighted, to give more significance to recent years.

¹¹⁴ The formula for doing this is $\begin{bmatrix} \frac{\text{company score} - \text{range minimum}}{\text{range maximum} - \text{range minimum}} \times 45 \end{bmatrix} + 5.$

¹¹⁵ We discussed this issue in our Customer Service Report 2002-03. The same weightings have been used in Scotland and England and Wales. This is because our review of a number of market research projects showed strong similarities between customer preferences either side of the border.
116 May 2005, available on our website.

¹¹⁷ Throughout our analysis, we have used the definitions that appear in 'Linking service levels to prices'.

Scottish Water can provide this information for the last two years and we can use this to compare performance with that of the companies south of the border.

Drinking water quality

The assessment for drinking water quality is based on the Drinking Water Inspectorate's (DWI) Operational Performance Indicator (OPI). This assesses compliance with respect to iron, manganese, aluminium, turbidity, faecal coliforms and trihalomethanes.

We do not have the same information for Scottish Water as is available for the companies in England and Wales. However, the DWI also collects information on the percentage of tests complying with quality parameters. We can compare performance using this information.

Sewer flooding - overload

This measure looks at the percentage of all properties connected to a company's sewer network that have been affected by an incident of internal sewage flooding caused by the overload of a sewer. This measure excludes incidents caused by severe weather.

Equivalent information on sewer flooding caused by overloaded sewers is collected for Scotland. We can therefore compare the performance of Scotlish Water with that of the companies in England and Wales.

Sewer flooding - other causes

This measure looks at the percentage of all properties connected to a company's sewer network which have been affected by an incident of internal sewage flooding caused by equipment failure or sewer blockage or collapse.

We have the same information available in Scotland. We can therefore compare the performance of Scottish Water with that of the companies in England and Wales.

Sewer flooding - at risk

This measure looks at the percentage of all properties connected to a company's sewer network that are

considered to be at risk of flooding by sewage, caused by overload, more frequently than once in ten years.

We collect the same information for Scotland. We can therefore compare the performance of Scottish Water with that of the companies in England and Wales.

Customer contact

Ofwat's customer contact measure is based on four equally weighted aspects of the companies' contact with customers:

- percentage of all billing contacts received that are answered within five working days;
- percentage of all written complaints received that are answered within ten working days;
- percentage of bills to metered customers that are based on a meter reading (as opposed to an estimated reading); and
- percentage of calls received that are answered within 30 seconds.

In Scotland, information regarding billing contacts, written complaints and calls answered within 30 seconds is available. However, we do not currently collect information on the number of bills for metered customers that are based on meter readings.

We can construct a combined 'customer contact' measure using the three individual measures.

Assessed customer service

This aspect of the OPA measures the quality of customer service delivered by the companies in England and Wales. It is based on assessments of seven aspects of customer service, including complaint handling and services for disabled and elderly customers. WaterVoice (the customer representative organisation in England and Wales) carries out these assessments.

Ofwat does not publish information for the companies in England and Wales on 'assessed customer service'. Unfortunately we cannot, therefore, collect information on the quality of customer service on a consistent basis.

Sewage treatment works consent compliance

This measure looks at the percentage population equivalent served by sewage treatment works that do not comply with the conditions of their discharge consents. Treatment works that are not complying with discharge consents may be causing environmental damage.

We collect the same information in Scotland and can, therefore, compare performance with that of the companies south of the border.

Sewage sludge disposal

This assessment looks at the percentage of total sewage sludge that is disposed of in an unsatisfactory manner.

We collect the same information in Scotland. We can therefore compare the performance of Scottish Water with that of the companies in England and Wales.

Category 1 & 2 pollution incidents (sewage)

This measure looks at the number of 'category 1 and 2' pollution incidents resulting from sewage collection and treatment activities, per million population equivalent served

In Scotland, the number of 'category 1 and 2' incidents is recorded, but the definition of the categories is not the same as for the companies in England and Wales. The category 1 and 2 incidents recorded by Ofwat are based on definitions used by the Environment Agency in England and Wales. In Scotland, the Scottish Executive has defined category 1 and 2 incidents differently. As a result, we cannot include this factor in our comparison of performance.

Category 3 pollution incidents (sewage)

This measure is similar to that for category 1 and 2 incidents.

Again, there is a difference in the definition of an incident between Scotland and England and Wales. We cannot, therefore, include this factor in our comparison of performance.

Category 1 & 2 pollution incidents (water)

This measure is similar to that for category 1 and 2 waste water incidents. These are incidents arising from treatment and distribution of water.

Again, there is a difference in the definition of an incident between Scotland and England and Wales. This precludes the use of this factor in our comparisons of performance.

Leakage

This assessment considers the difference between current levels of leakage from water mains and the economic level of leakage (ELL). The measure is based on the percentage difference between the ELL target for the year and the actual level of leakage recorded. This measure relies on targets having been set for leakage and on leakage being measured on an annual basis.

Scottish Water does not currently have specified targets for reducing leakage. However, we expect that the new commission will wish to have a target in place by December 2007 at the latest.

Guaranteed minimum standards

We agreed the introduction of GMS for the Scottish water industry in October 2000. These are the minimum standards of service that Scottish Water must meet, and which customers have a right to expect. Failure to comply with any of the standards entitles the customer to financial compensation.

The GMS are:

- planned interruptions give 48 hours notice of a planned interruption likely to last more than four hours and restore supply within the stated time;
- unplanned interruptions restore supply within 12 hours of an unplanned interruption (or within 48 hours for a trunk main);

- following an internal sewer flooding incident visit within three hours and solve the problem within eight hours, clean up the mess and refund the annual sewerage charge;
- payment enquiries respond to a request to change the method of payment within five working days, and to other billing, charging and metering enquiries within ten working days; and
- complaints respond fully in writing to a written complaint, or to a telephone complaint where a written response is requested, within ten working days.

Clearly, the GMS do not cover every situation in which poor levels of service arise. While we regard Scottish Water's performance in meeting its GMS as important, we believe that the OPA provides a more comprehensive picture of the level of service provided to customers.

As with financial performance we share Ofwat's view that it is important to monitor the level of service provided to customers on an annual basis. Annual monitoring allows us to take any steps necessary to ensure that customers receive value for money.

The performance of Scottish Water

The overall performance assessment (OPA)

We have included as many of the measures that are used by Ofwat as possible in our assessment of the OPA score for Scottish Water. Table 13.1 sets out the measures that we have included.

Table 13.1: Components of the OPA assessment

OPA component Included or not Basis and comparability of measure Inadequate pressure Included Actual performance, equivalent measure Supply interruptions Included Actual performance, equivalent measure Hosepipe restrictions Included Assumed performance Drinking water quality Included Actual performance, some difference in definition of measure Sewer flooding (overloaded sewers) Included Actual performance, equivalent measure Sewer flooding (other causes) Included Actual performance, equivalent measure Sewer flooding (at risk) Included Actual performance, equivalent measure Company contact (3 out of 4 measures) Included Actual performance, equivalent measure Assessed customer service Not included Actual performance, equivalent measure Sewage sludge disposal Included Actual performance, equivalent measure Sewage treatment works Included Actual performance, equivalent measure Category 1 & 2 pollution incidents (sewerage) Not included Category 3 pollution incidents (sewerage) Not included Category 1 & 2 pollution incidents (water) Not included			I
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(sewerage) Category 1 & 2 pollution incidents (water) Not included		Not included	
(water)		Not included	
Leakage Included Assumed performance		Not included	
	Leakage	Included	Assumed performance

Although we have had to make assumptions about performance in some areas, our view is that this does not materially impact on the assessment of Scottish Water's overall performance.

Scottish Water's OPA score for 2003-04 is 159, based on the measures set out in Table 13.1. Table 13.2 compares this with the equivalent scores for the water and sewerage companies in England and Wales¹¹⁸.

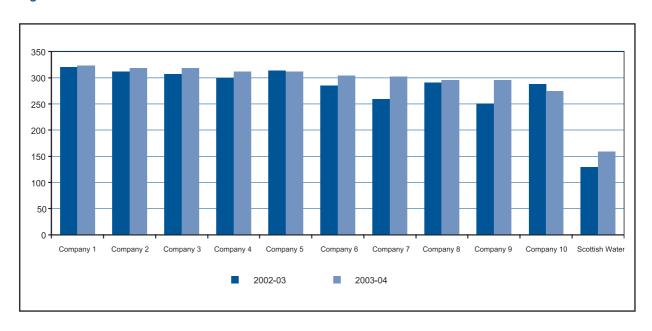
¹¹⁸ Adjusted to reflect the parameters that we are able to measure on an equivalent basis in Scotland.

Table 13.2: OPA scores 2003-04

2003-04 OPA score based on our measures		
159		
274		
295		
296		
302		
304		
312		
312		
318		
318		
323		

Figure 13.1 also shows the scores for both 2002-03 and $2003-04^{119}$.

Figure 13.1: OPA scores for 2002-03 and 2003-04



Scottish Water's overall performance was relatively poor. Its score is 58% of that of the worst performing company in England and Wales and 49% of the best performing company's score.

Individual performance measures

We now consider each of the individual performance measures in turn. This will show which areas of performance are most in need of improvement.

¹¹⁹ We did not collect a sufficient breakdown of information for supply interruptions for 2002-03 for Scottish Water, instead we base 2002-03 performance on 2003-04 scores.

Inadequate pressure

In 2003-04, 0.52% of the properties connected to Scottish Water's network experienced pressure below the reference level. Table 13.3 shows Scottish Water's performance relative to that of the companies in England and Wales.

Table 13.3: Properties below reference levels for pressure in 2003-04

	Percentage of properties below reference level of pressure in 2003-04
Scottish Water	0.52%
Anglian	0.06%
Dwr Cymru (England and Wales best)	0.02%
Northumbrian	0.02%
Severn Trent (England and Wales median)	0.03%
South West (England and Wales median)	0.03%
Southern	0.05%
Thames (England and Wales worst)	0.07%
United Utilities	0.03%
Wessex	0.05%
Yorkshire	0.01%

Just 0.07% of properties served by the worst performing company in England and Wales suffered from low pressure. Just 0.01% of properties served by Yorkshire Water suffered from low pressure.

Supply interruptions

In 2003-04, more than 60,000 Scottish Water customers experienced interruptions lasting up to 24 hours. A total of 2,266 customers suffered longer periods without water. Of all properties served by Scottish Water, 2.63% experienced supply interruptions that lasted longer than four hours (customers who experienced interruptions of longer than 12 hours are given a greater weight in the calculation).

Table 13.4: Percentage of properties suffering supply interruptions in 2003-04

	Weighted percentage score for properties receiving unplanned interruptions
Scottish Water	2.63%
Anglian	0.65%
Dwr Cymru (England and Wales best)	0.03%
Northumbrian	0.18%
Severn Trent (England and Wales median)	0.28%
South West (England and Wales median)	0.32%
Southern	0.38%
Thames (England and Wales worst)	2.46%
United Utilities	0.08%
Wessex	1.40%
Yorkshire	0.19%

Scottish Water's performance is marginally worse than that recorded by Thames Water. However, the performance of both of these companies are much worse than that of Wessex Water, which in turn lags considerably behind all of the other companies.

Hosepipe restrictions

This measure considers hosepipe restrictions imposed during the most recent five years. We know that Scottish Water has imposed no such restrictions in the last two years (2002-03 and 2003-04), but we do not have information for the three preceding years. We have assumed that there have been no such bans in the last five years.

No company in England and Wales has had a hosepipe ban in the past five years to March 2005. All companies (including Scottish Water) have therefore performed equally well in this measure.

Drinking water quality

Ofwat normally uses a measure of drinking water quality that is not available in Scotland. We have used the percentage of non-compliant samples (i.e. the percentage of water samples that did not meet the required level of quality).

Table 13.5 shows the percentage of non-compliant samples for every company (including Scottish Water). For this measure, Scottish Water's performance lags behind that of all of the companies in England and Wales.

Table 13.5 also shows the performance indices that are normally used by Ofwat to determine the appropriate score for the companies in England and Wales. There are small but relatively insignificant differences between the two measures. We have therefore compared Scottish Water's performance on non-compliant samples with the performance index for the companies in England and Wales.

Table 13.5: Drinking water quality measures 2003-04

	Percentage of non-compliant samples	Performance index (as a percentage)	Difference
Scottish Water	98.97%		
Anglian (England and Wales best)	99.70%	99.95%	-0.25%
Dwr Cymru	99.85%	99.81%	0.04%
Northumbrian (England and Wales worst)	99.92%	99.70%	0.22%
Severn Trent	99.83%	99.94%	-0.11%
South West	99.92%	99.72%	0.20%
Southern (England and Wales median)	99.86%	99.87%	-0.01%
Thames	99.91%	99.95%	-0.04%
United Utilities	99.82%	99.72%	0.10%
Wessex	99.93%	99.90%	-0.03%
Yorkshire (England and Wales median)	99.95%	99.86%	0.09%

Scottish Water would appear to be the poorest performer in terms of drinking water quality.

Sewer flooding - overload

In 2003-04, Scottish Water reported that 40 of its connected properties were flooded due to insufficient capacity in the sewerage system. One of these cases was caused by extreme weather conditions.

Table 13.6 compares Scottish Water's performance in sewer flooding caused by overload with that of the water and sewerage companies in England and Wales.

Table 13.6: Percentage of properties flooded (insufficient capacity) 2003-04

	Percentage of connected properties flooded (insufficient capacity)
Scottish Water	0.0016%
Anglian (England and Wales best)	0.0006%
Dwr Cymru	0.0039%
Northumbrian	0.0073%
Severn Trent (England and Wales median)	0.0022%
South West	0.0059%
Southern	0.0010%
Thames	0.0010%
United Utilities (England and Wales worst)	0.0103%
Wessex	0.0012%
Yorkshire (England and Wales median)	0.0030%

Scottish Water performed well in this measure, with a score higher than the average score achieved by the water and sewerage companies in England and Wales.

Sewer flooding - other causes

In 2003-04, Scottish Water reported 298 incidents of sewer flooding caused by equipment failure (4); blockages (283) or collapses (11). This equated to flooding of 0.0126% of all properties connected to Scottish Water's sewerage network. We can compare this performance with that of the companies south of the border.

Table 13.7: Percentage of properties flooded (other causes) 2003-04

	Percentage of connected properties flooded (other causes)
Scottish Water	0.0126%
Anglian (England and Wales best)	0.0046%
Dwr Cymru	0.0096%
Northumbrian (England and Wales median)	0.0102%
Severn Trent	0.0162%
South West (England and Wales median)	0.0126%
Southern	0.0130%
Thames	0.0081%
United Utilities (England and Wales worst)	0.0162%
Wessex	0.0073%
Yorkshire	0.0136%

Scottish Water's performance for this measure of sewer flooding is just below that of the England and Wales average and in line with the median performance.

Sewer flooding - at risk

In its 2003-04 Annual Return, Scottish Water reported that approximately 1,100 properties were at risk of being flooded. This suggests that 0.0434% of the properties connected to Scottish Water's sewerage network were at risk from flooding in 2003-04. Again we can compare this performance with that of the water and sewerage companies in England and Wales.

Table 13.8: Percentage of properties at risk of sewer flooding 2003-04

	Percentage of properties at risk of sewer flooding
Scottish Water	0.0434%
Anglian	0.0350%
Dwr Cymru	0.0150%
Northumbrian	0.0175%
Severn Trent (England and Wales median)	0.0309%
South West (England and Wales median)	0.0261%
Southern	0.0185%
Thames	0.0548%
United Utilities	0.0335%
Wessex (England and Wales worst)	0.0573%
Yorkshire (England and Wales best)	0.0135%

Scottish Water performs better than both Thames Water and Wessex Water. However, almost three times as many of its properties are at risk of sewer flooding than the best performing company.

Customer contact

We have focused on performance in three areas: responses to billing contacts; responses to written complaints; and calls answered within 30 seconds.

Table 13.9: Customer contact measures 2003-04

	Percentage of billing contacts dealt with within 5 days	Percentage of written complaints dealt with within 10 days	Percentage of telephone calls answered within 30 seconds
Scottish Water	80.7%	99.8%	84.5%
Anglian	99.6%	100.0%	92.3%
Dwr Cymru	100.0%	99.9%	94.5%
Northumbrian	98.7%	99.8%	91.8%
Severn Trent	100.0%	100.0%	98.9%
South West	100.0%	100.0%	95.1%
Southern	99.3%	100.0%	95.3%
Thames	99.2%	99.6%	81.6%
United Utilities	99.1%	99.9%	93.2%
Wessex	100.0%	100.0%	97.0%
Yorkshire	100.0%	99.8%	94.8%

Scottish Water's performance in dealing with billing contacts is much poorer than that of the companies south of the border.

Scottish Water's performance in responding to written complaints is better. It has dealt with 99.8% within ten working days. This is poorer than the England and Wales average, but better than the worst performer in England and Wales.

Performance in answering telephone calls within 30 seconds varied considerably between companies, with the best performer achieving the standard for 98.9% of telephone calls and the worst for 81.6% of telephone calls. Scottish Water's performance is relatively poor, with only one company in England and Wales performing less well.

Sewage treatment works consent compliance

In its 2003-04 Annual Return, Scottish Water reported that 6.5% of its population equivalent was served by treatment works failing their consent conditions. We can compare this performance with that of the companies in England and Wales.

Table 13.10: Percentage population served by works failing consent conditions

	Percentage of equivalent population served by a works failing its consent condition
Scottish Water	6.5%
Anglian	0.4%
Dwr Cymru	0.1%
Northumbrian	1.1%
Severn Trent	0.1%
South West	1.3%
Southern	0.1%
Thames	0.1%
United Utilities	0.3%
Wessex	0.0%
Yorkshire	0.2%

Scottish Water's performance in this measure is considerably poorer than that of the companies operating in England and Wales.

Sewage sludge disposal

In its 2003-04 Annual Return, Scottish Water reported that no sludge was disposed of unsatisfactorily. This is also true for each company in England and Wales. Each company therefore performed equally well in this measure.

Leakage

Ofwat measures the leakage performance of companies in England and Wales against their target for the economic level of leakage. We do not yet have the information to allow us to calculate an economic level of leakage for Scottish Water. It is not possible, therefore, to compare its leakage performance to that of the companies south of the border.

Estimates of leakage¹²⁰ from Scottish Water's supply pipes suggest that it is greater than that for other water companies (at 48.0%, compared with 32.9% for Thames Water, the worst performing company in England and Wales). It is highly likely that Scottish Water's level of leakage exceeds the economic level. There is no evidence to suggest any improvement in leakage levels

since 1997, when targets were introduced in England and Wales. This suggests that Scottish Water's leakage is likely to be relatively high.

We have therefore assumed that Scottish Water's leakage performance is at or below the minimum of the range for this measure, and have given it the minimum score for this measure.

A low starting score for this measure gives Scottish Water an opportunity to record a significant improvement on this measure and improve its absolute and relative performance score.

Milestones for improving levels of service

Scottish Water clearly has considerable room for improvement in the level of service it provides to its customers. We have set maximum charges in this draft determination such that Scottish Water's customers should expect to see improving service during the regulatory control period. Our assumption is that Scottish Water's performance by the end of this regulatory control period should be broadly equivalent to the current performance of the companies south of the border.

Since we were unable to make adjustment to Scottish Water's operating costs, we have set milestones to monitor improvements in the level of service provided by Scottish Water each year. These milestones will help us to gauge whether Scottish Water is making good progress in closing the level of service gap. These milestones will also allow us to confirm that efficiency targets¹²¹ are not being met at the expense of customer service.

It is likely that the companies south of the border will continue to improve their level of service to customers. We therefore need to set milestones which will ensure that Scottish Water closes the performance gap. For example, if Scottish Water were to improve its OPA so that at the end of the regulatory control period it matches that of the poorest performing company in England and

¹²⁰ Information from Ofwat June Return 2004 and Scottish Water's Annual Return 2003-04.

¹²¹ These efficiency targets would have been increased if we had been able to adjust operating costs to take account of the differences in the level of service provided to customers.

Wales in 2003-04, it is likely that there would still be a gap in performance. We need to establish milestones that would bring Scottish Water's performance at least in line with the scores achieved currently by the average¹²² companies in England and Wales if we want to be sure that the level of service will approach that available south of the border by the end of the regulatory control period.

Table 13.11 shows the milestones that we expect Scottish Water to achieve.

Table 13.11: Milestones for the overall performance assessment

Year	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPA	159	159	159	195	232	268	305

Conclusion

At the current time, Scottish Water's overall performance assessment score is just above 50% of that of the poorest performing company south of the border. This draft determination has set price caps that are consistent with a significant improvement in the level of service provided by Scottish Water to its customers. In order that we can gauge Scottish Water's progress in improving its level of service, we have set annual milestones. These milestones are set in terms of the overall performance assessment framework and allow us to check that reductions in cost are not being achieved by cutting corners on the level of service provided.

It is important to emphasise that we have had to take this approach because we have not been able to adjust Scottish Water's relative operating cost efficiency to take account of the current differences in the level of service provided. It is therefore vital that these targeted improvements are realised. The OPA milestones are an important part of this draft determination.

¹²² The arithmetic average of the OPA scores for the companies south of the border in 2003-04 is 305.4.

Section 3: Setting the allowed for level of operating costs

Chapter 14: Required improvement in Scottish Water's performance

Introduction

In Scotland, a direct result of Scottish Water's inefficiency is that customers have had to pay more for the water and sewerage services they have received than they otherwise would have done.

In this draft determination, we have set charges which should ensure that customers in Scotland begin to see the benefit of the lower cost of capital that the public sector industry enjoys. Our analysis has allowed us to assess the efficiency gap that currently exists between Scotlish Water and the companies in England and Wales.

It is necessary for us to understand the efficiency gap that could exist in the future. In its 2004 price review, Ofwat has set prices that require all of the companies south of the border to improve their absolute level of efficiency. It has also identified that there is scope for well-managed companies to out-perform.

We have therefore assessed the scope for improvement in the efficiency of Scottish Water relative to both the current efficiency gap and the industry's overall scope for improvement.

This chapter reviews the evidence on the industry's scope for improvement. We use this evidence and the information on current performance to set the allowed for level of operating cost.

Ofwat's approach

In England and Wales, Ofwat has used econometric modelling to assess the relative operating cost efficiency of the companies south of the border at each of its three price reviews.

Ofwat also takes account of the overall improvement in efficiency that the industry is likely to achieve. The expectations made by Ofwat when setting prices for the companies south of the border comprise two elements:

- an overall improvement in the efficiency of the industry; and
- a 'catch-up' factor, by which all companies (except, of course, the leading company) have to narrow the gap to the leading company.

Ofwat's 1999 price review

For its 1999 price review, Ofwat asked Europe Economics and Professor Nick Crafts of the London School of Economics to complete a detailed study of the potential for improving operating cost efficiency. They concluded that there was scope for efficiency savings in operating expenditure of around 2.5% to 3.5% a year. The results of that study support the hypothesis that efficiency gains can be large and can be achieved quickly until a company nears the efficiency frontier.

Ofwat assumed that all of the companies should make a minimum efficiency saving of 1.4% a year for the five years 2000-05 in their base operating expenditure. This target reflected the scope for improvement that resulted from improved technology and innovation. Some of the more efficient companies had also suggested that this level of improvement was realistic. The targeted 1.4% a year improvement allowed scope for the best companies to out-perform.

Ofwat concluded that all of the companies (except the frontier company) should have to narrow the gap to the frontier company. Ofwat set this 'catch-up' factor at 60% of the initial efficiency gap over the regulatory control period.

Ofwat required the companies to improve their efficiency by an equal amount each year.

Ofwat's 2004 price review

In December 2004, Ofwat published its final determinations for the 2004 price review¹²⁴. This review covered the period 2005-10. Ofwat accepted that the

^{123 &#}x27;Water and sewerage industries general efficiency and potential for improvement', Ofwat, October 1998

¹²⁴ 'Future water and sewerage charges 2005-10 - Final determinations', Ofwat, December 2004.

scope for the industry as a whole to improve may have fallen. In this review, it again set the 'catch-up' factor at 60%.

in the long-term interests of customers. The success of the companies south of the border in out-performing their regulatory contracts is illustrated in Figure 14.1.

Ofwat again commissioned a study by Europe Economics to look at the potential scope for efficiency improvement in the water industry. Europe Economics updated the work it had carried out for Ofwat as part of the 1999 price review. The study, published in March 2003¹²⁵, compared the water and sewerage companies with:

- sectors of the economy that have similar activities to the water and sewerage companies; and
- other UK privatised infrastructure companies since their privatisation.

Comparisons of productivity trends allowed Europe Economics to forecast the scope for efficiency improvements in the water and sewerage industry in England and Wales for the period 2003-13. Europe Economics concluded that the companies in England and Wales, as a whole, had scope to improve operating expenditure efficiency by around 3% a year.

Ofwat set prices that reflected the scope for the industry to improve its efficiency at approximately 0.6% a year for the water service and 1% a year for the sewerage service.

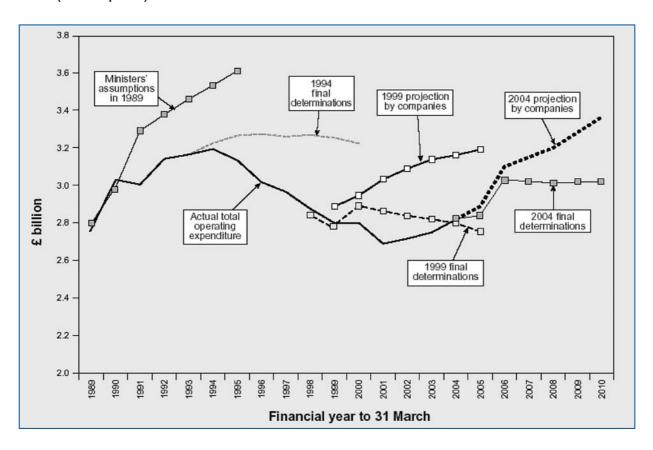
Incentives to out-perform Ofwat's assumptions

In 2004, Ofwat divided the scope for efficiency improvement into 'carrots' and 'sticks'. The carrot is the scope for efficiency that has not been included in the price limit. The stick is the scope for efficiency that has been included in the price limit.

Incentive-based regulation works by providing an incentive for a company to work hard to out-perform its regulatory contract. Any such out-performance is reclaimed for the customer at the next price review, and the next set of targets are more demanding than would otherwise have been the case. This ratchet approach is

¹²⁵ Available at www.ofwat.gov.uk.

Figure 14.1: Comparison of total operating costs for the water and sewerage industry in England and Wales (2003-04 prices)¹²⁶



Implications of Scottish Water's progress against the targets set for 2002-06

Scottish Water has made good progress towards the targets set in the Strategic Review of Charges 2002-06. We expect baseline operating costs for the core business to reduce from £296 million in 2003-04 to around £271 million in 2004-05¹²⁷ and around £248 million in 2005-06, in 2003-04 prices. This is consistent with the forecasts contained in Scottish Water's business plans.

Since Scottish Water is improving rapidly we are able to set an allowed for level of operating cost for the 2006-10 regulatory control period based on a much lower baseline for operating costs than would be implied by our analysis of performance in 2003-04.

Our approach to setting prices for 2006-10

The assessment of relative efficiency

We have assessed Scottish Water's relative efficiency in a number of ways. Our analysis reviewed the results of:

- the Ofwat econometric models;
- the modified Ofwat econometric models;
- the WICS alternative model; and
- the modified WICS alternative model.

¹²⁶ From Ofwat's 'Water and sewerage service unit costs and relative efficiency 2003-04 report', p10.

¹²⁷ This estimate is based on latest regulatory returns for 2004-05 but is not yet confirmed in full regulatory accounts. Including inflation, it is £281 million.

Scottish Water's assessment of relative efficiency

In its draft business plans, Scottish Water claimed that its relative operating cost efficiency was around the average for England and Wales in 2003-04. It claimed to be very close to the frontier company for the water service, and had to reduce sewerage costs by only 9% to become the frontier company for the sewerage service. We have reviewed these claims carefully.

Scottish Water looks likely to have reduced its operating costs by around 9% in real terms during 2004-05. If we combine that improvement with the relative efficiency position claimed in the second draft business plan, Scottish Water would be the clear frontier company for the water service and would be very close to the frontier for sewerage.

Scottish Water has also said that it expects to make similar significant improvements in 2005-06. If Scottish Water's analysis of relative efficiency were accurate, these improvements would make Scottish Water the frontier water and sewerage service provider in Britain, by a significant margin. This would not be consistent with the past asset knowledge that Scottish Water references in its draft business plans.

Scottish Water's assessment of its relative efficiency takes account of its £52.7 million claim for special factors. We discussed Scottish Water's claims for such special factor costs in Chapter 12. Our assessment is that special factors account for £17.4 million, or around 6%, of Scottish Water's operating costs.

In our view, Scottish Water's assessment also takes insufficient account of the differences in the scope of activities compared with the companies in England and Wales. We discussed this in Chapter 13.

Our analysis of Scottish Water's operating efficiency indicates that it would need to reduce costs by 32% and 24% from 2003-04 levels¹²⁸ to achieve frontier efficiency for the water and sewerage service, respectively.

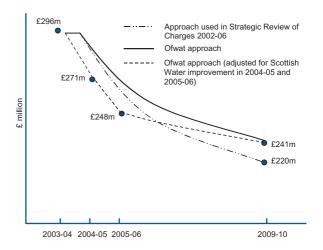
Our assessment of the scope for Scottish Water to improve

In our methodology consultation, we explained that there were a number of ways in which we could assess the scope for Scottish Water to improve its efficiency. We considered the following four approaches:

- retain the approach that we used in the Strategic Review of Charges 2002-06;
- adopt Ofwat's approach using a 2003-04 baseline;
- adopt Ofwat's approach using a 2003-04 baseline, but take account of continuing improvements by Scottish Water in 2004-05 and 2005-06;
- determine the required pace of improvement that would bring Scottish Water's performance in line with the companies over the period to 2014.

Figure 14.2 shows the impact of the first three of these options on Scottish Water's baseline operating costs.

Figure 14.2: Scope for improvement in operating costs (in 2003-04 prices)



We decided to adopt the approach used by Ofwat, adjusted to take account of the rapid improvement that Scottish Water has confirmed it expects to make in the last

Relative to Wessex Water for the water service and Yorkshire Water for the waste water service.

two years of the current regulatory control period. Ofwat's approach has the advantage that it is well understood by stakeholders. Since the efficiency challenge required by this approach is less than the 80% gap closure that we used in the last Strategic Review of Charges, Scottish Water has greater opportunity to outperform.

Accepting Scottish Water's view on its likely improvement over the remainder of this regulatory control period affects the level of operating costs that we have allowed in the earlier years of the regulatory control period. It does not affect the overall closure of the operating cost efficiency gap achieved by 2009-10.

Implications for Scottish Water

Table 14.1 shows the profile of base operating cost. It does not include either new operating costs or any additions to the baseline. We have phased the improvement from 2006-07 in line with Scottish Water's estimate of its performance in 2004-05 and 2005-06. All costs are in 2003-04 prices¹²⁹.

Table 14.1: Profile of costs if Scottish Water closes 60% of the base operating expenditure efficiency gap¹³⁰

	2003-04 (base year)	2004-05 (estimated performance)	2005-06 (expected performance)	2006-07 (phased)	2007-08 (phased)	2008-09 (phased)	2009-10 (60% gap closure)
Water	£166.7m	£152.6m	£139.3m	£135.6m	£134.6m	£133.7m	£132.7m
Sewerage	£129.7m	£118.8m	£108.3m	£107.9m	£108.0m	£108.1m	£108.2m
Total	£296.5m	£271.4m	£247.6m	£243.5m	£242.6m	£241.8m	£240.9m

Scottish Water has scope to outperform the costs set out in Table 14.1. Indeed, if the full scope for efficiency were to be realised, the profile of expenditure would be as shown in Table 14.2. Again, all costs are in 2003-04 prices.

Table 14.2: Profile of costs if Scottish Water closes 100% of the operating expenditure efficiency gap

	2003-04 (base year)	2004-05 (estimated performance)	2005-06 (expected performance)	2006-07 (phased)	2007-08 (phased)	2008-09 (phased)	2009-10 (100% gap closure)
Water	£166.7m	£152.6m	£139.3m	£130.0m	£123.3m	£116.7m	£110.0m
Sewerage	£129.7m	£118.8m	£108.3m	£104.3m	£100.7m	£97.1m	£93.6m
Total	£296.5m	£271.4m	£247.6m	£234.3m	£224.1m	£213.8m	£203.6m

¹²⁹ The costs presented in this chapter are on a different basis to those that were published as targets in the Strategic Review of Charges 2002-06. For example, they exclude non-core activities and inter-authority trading. They are therefore not comparable with previously published targets.

¹³⁰ Totals in Tables 14.1 to 14.9 may not add up due to rounding.

The scope for outperformance in the period 2006-10 is the difference between the profiles in Tables 14.1 and 14.2. This is shown in Table 14.3, in 2003-04 prices.

Table 14.3: Scope for Scottish Water to outperform targeted 60% closure of the operating expenditure efficiency gap

	2006-07	2007-08	2008-09	2009-10
Water	£5.6m	£11.3m	£17.0m	£22.7m
Sewerage	£3.6m	£7.3m	£11.0m	£14.6m
Total	£9.2m	£18.6m	£27.9m	£37.3m

Scope for improvement in allowed additions to baseline operating expenditure

In Chapter 6 we set out the additions to the baseline of operating costs that we have allowed in this draft determination. We assume that there is the same scope to improve the efficiency of additional as baseline operating costs. This is consistent with the approach adopted by Ofwat at the 2004 price review.

Table 14.4 sets out the additional costs that we have added to the baseline. The table assumes that Scottish Water closes 60% of the operating cost efficiency gap by 2009-10.

Table 14.4: Profile of additions to baseline operating costs, assuming that Scottish Water closes 60% of the efficiency gap

	2006-07	2007-08	2008-09	2009-10
Water	£6.8m	£7.7m	£8.6m	£8.3m
Sewerage	£2.6m	£2.5m	£2.4m	£2.3m
Total	£9.4m	£10.2m	£11.0m	£10.6m

Scottish Water again has scope to out-perform the assumptions in Table 14.4. Indeed, if the full scope for efficiency were realised, the profile of additions to the operating expenditure baseline would be as shown in Table 14.5. All costs are in 2003-04 prices.

Table 14.5: Profile of allowed additions to baseline operating costs, assuming that Scottish Water closes 100% of the efficiency gap

	2006-07	2007-08	2008-09	2009-10
Water	£6.3m	£6.9m	£7.4m	£6.8m
Sewerage	£2.4m	£2.3m	£2.1m	£2.0m
Total	£8.8m	£9.2m	£9.6m	£8.8m

Scope for improvement in allowed new operating expenditure

In Chapter 7, we explained the pre-efficiency new operating costs that we have allowed for. In its 2004 final determinations, Ofwat set targets for improvement in the efficiency of new operating costs. Table 14.6 sets out Ofwat's assumptions.

Table 14.6: Ofwat's assumptions for annual efficiency improvements in new operating expenditure

	Target annual improvement	Potential annual out- performance	Total scope for annual improvement
Water service – baseline operating expenditure	1.4%	1.0%	2.4%
Water service – enhancements	1.85%	0.85%	2.7%
Sewerage service – baseline operating expenditure	1.3%	1.0%	2.3%
Sewerage service – enhancements	1.75%	1.05%	2.8%

Ofwat believes that there is greater scope for efficiency improvements in new operating expenditure than in baseline operating expenditure. It considers that the companies should be able to achieve greater improvements in new operating expenditure because they are able to take advantage of new technology or the latest operational practices.

We share Ofwat's view that it is easier for an organisation to improve the efficiency of new operating expenditure than baseline operating expenditure. We have assumed that Scottish Water closes 75% of the efficiency gap on new operating expenditure. We have also assumed that the frontier performance of the

industry will improve at a rate that is 50% greater than for baseline operating costs. This is consistent with the approach used by Ofwat.

Table 14.7 sets out the profile of new operating costs, assuming that Scottish Water closes 75% of the efficiency gap by 2009-10.

Table 14.7: Profile of allowed for new operating costs, assuming that Scottish Water closes 75% of the efficiency gap

	2006-07	2007-08	2008-09	2009-10
Water	£0.2m	£0.5m	£1.1m	£5.1m
Sewerage	£0.8m	£2.0m	£2.7m	£4.2m
Total	£1.0m	£2.6m	£3.8m	£9.3m

Scottish Water has scope to outperform the assumptions in Table 14.7. Indeed, if the full scope for efficiency were realised, the profile of new operating costs would be as shown in Table 14.8. All costs are in 2003-04 prices.

Table 14.8: Profile of allowed for new operating costs, assuming that Scottish Water closes 100% of the efficiency gap

	2006-07	2007-08	2008-09	2009-10
Water	£0.2m	£0.5m	£1.0m	£4.5m
Sewerage	£0.8m	£1.9m	£2.5m	£3.8m
Total	£0.9m	£2.4m	£3.5m	£8.2m

Summary

Evidence from the water and sewerage companies in England and Wales shows that savings can be sustained over a number of years. We therefore expect Scottish Water to continue to improve its performance.

We have adopted Ofwat's approach of targeting a 60% closure of the efficiency gap for baseline operating expenditure and additions to baseline operating expenditure. Our improvement profile reflects Scottish Water's expected performance in 2005-06. We have adopted Ofwat's annual continuing improvement assumptions of 0.3% for the water service and 0.5% for the sewerage service.

Our approach on new operating expenditure is again consistent with that adopted by Ofwat. It assumes that Scottish Water closes 75% of the efficiency gap, and that the assumed improvement is 0.45% and 0.75% a year for the water and sewerage services respectively. Again, our improvement profile reflects expected performance in 2005-06.

The total scope for outperformance is shown in Table 14.9.

Table 14.9: Total scope for out-performance in operating costs 2006-10

	2006-07	2007-08	2008-09	2009-10
Water	£6.1m	£12.2m	£18.3m	£24.7m
Sewerage	£3.8m	£7.6m	£11.4m	£15.4m
Total	£9.9m	£19.8m	£29.7m	£40.1m

Scottish Water's rapid improvement in 2004-05 and 2005-06 means that it is well placed to out-perform the regulatory contract over the period 2006 to 2010. Our approach to setting the allowed for level of operating costs provides Scottish Water with significant and increasing scope to outperform, year on year. Similarly, the risks of underperformance are small, as the allowed for level of baseline operating costs reduces only slightly by 2009-10 from the level that Scottish Water expects to achieve in 2005-06. This should motivate Scottish Water to generate additional savings that will ultimately benefit customers.

Section 3: Setting the allowed for level of operating costs

Chapter 15: Allowed for level of operating expenditure

Introduction

In this draft determination, the allowed for level of operating expenditure accounts for some 40% of customers' bills.

We have set a total allowed for level of operating expenditure for Scottish Water. This level of operating expenditure is sufficient for Scottish Water to deliver Ministers' objectives for the water industry.

Our view is that it is easier for stakeholders to understand a total level of operating expenditure than efficiency targets. We will measure and monitor performance against this allowed for level of operating expenditure using the regulatory accounts. We will make adjustments to reported information where necessary, to ensure that our comparisons are made on a like-for-like basis.

The level of operating cost that we have allowed for provides the same scope for Scottish Water to outperform as Ofwat would normally make available to the companies south of the border. In the previous chapter we indicated the potential scope for such outperformance. The allowed for level of operating cost is therefore the minimum level of performance by Scottish Water that we would consider acceptable. In our view, Scottish Water should seek to incur lower operating costs than the level we have allowed for. At the same time, we expect Scottish Water to provide a better level of service to its customers.

In order to set the allowed for level of operating cost, we followed an eight-step process. At each step we have reviewed various aspects of Scottish Water's operating costs to ensure that they are no higher than they need to be. Earlier chapters in this volume have discussed each of these steps in detail.

This chapter summarises how we have set the total allowed for level of operating expenditure.

Components of the total allowed for operating expenditure calculation

Establishing a baseline

We established a baseline level of operating expenditure to which we applied future efficiency targets. In this draft determination we have used 2003-04 as a base year. Our analysis considered the following:

- The baseline level of operating expenditure as reported for 2003-04.
- Whether there are changes to this baseline, which are outside the control of Scottish Water's management during the 2006-10 regulatory control period.

To establish the level of baseline operating costs for 2003-04 we:

- take reported core costs;
- adjust for atypical costs (or savings);
- · remove exceptional items; and
- ensure that cost allocation practices are consistent with those in England and Wales.

We then assessed whether there were any changes in operating costs that were beyond the control of Scottish Water, which could affect this baseline during the 2006-10 regulatory control period. We took account of the following costs:

Non-domestic rates. The basis on which Scottish Water's assets are valued for non-domestic rates purposes changed in April 2005. As a result of this change it was anticipated that Scottish Water could face a substantial increase in its non-domestic rates bill. We have allowed for an increase in baseline costs of £22.5 million (in 2003-04 prices) over the period 2006-07 to 2009-10.

- Pensions costs. In its second draft business plan, Scottish Water indicated that it needed to increase the level of company pension contributions to meet its pension obligations. Following the receipt of actuarial valuations from Scottish Water to substantiate this claim, we have allowed for £20.4 million (in 2003-04 prices) over the period 2006-07 to 2009-10 of additional costs.
- Power costs. In its second draft business plan, Scottish Water indicated that it would face increased power costs over the period to 2010. We have analysed this claim, and allowed for £4.1 million (in 2003-04 prices) over the period 2006-07 to 2009-10.
- Reporter costs. We anticipate that Scottish Water will incur the costs of the Reporter from 2006-07. We have allowed for £0.3 million per year for this item.

Table 15.1 illustrates the 2003-04 baseline and adjustments.

Table 15.1: 2003-04 baseline and adjustments (2003-04 prices)

			1	
	2006-07	2007-08	2008-09	2009-10
Base operating expenditure	£296.5m	£296.5m	£296.5m	£296.5m
Assessed change to baseline for				
Non-domestic costs	£3.8m	£5.2m	£6.7m	£6.7m
Pension costs	£5.1m	£5.1m	£5.1m	£5.1m
Power costs	£1.0m	£1.0m	£1.0m	£1.0m
Reporter costs	£0.3m	£0.3m	£0.3m	£0.3m
Total	£306.7m	£308.1m	£309.6m	£309.6m

The initial efficiency gap

We define the efficiency gap as the difference between Scottish Water's actual costs and those that would be incurred if it operated at the same efficiency level as either the average or the best performing water and sewerage company in England and Wales. We have calculated the difference using four separate models:

- the standard Ofwat econometric models:
- the standard Ofwat econometric models, revised to include information from Scottish Water:

- the alternative model developed by this Office; and
- the alternative model, revised to include information from Scottish Water.

Our analysis assessed the relative performance of all of the water and sewerage companies. We rebased our results such that the average company achieved a score of 100. This simplifies the presentation of relative efficiency. A score of greater than 100 indicates inefficiency relative to the average performer.

Table 15.2 illustrates Scottish Water's efficiency score using the four models. The score from the Ofwat models is stated after all adjustments to the residual.

Table 15.2: Scottish Water's efficiency score

	Ofwat models	Modified Ofwat models	WICS alternative model	Modified WICS alternative model
Water service	111	111	110	115
Waste water service	124	122	130	129

We focus on comparing Scottish Water's performance with the companies south of the border. In 2003-04, the benchmark company in England and Wales for the water service was Wessex Water. For the waste water service it was Yorkshire Water. Ofwat used these companies when it calculated the scope for other companies to improve.

We have used the results from our four modelling exercises to calculate the efficiency gap between Scottish Water and the benchmark companies. We have also calculated the gap between Scottish Water and the average in England and Wales. This is illustrated in Table 15.3.

Table 15.3: Scottish Water's efficiency gap

	Ofwat models	Modified Ofwat models	WICS alternative model	Modified WICS alternative model
Average: water service	10%	10%	9%	13%
Wessex Water: water service	28%	27%	38%	39%
Yorkshire Water: water service	23%	23%	18%	24%
Average: waste water service	19%	18%	23%	22%
Wessex Water: waste water service	33%	32%	39%	39%
Yorkshire Water: waste water service	29%	28%	40%	40%
Average: combined	14%	13%	15%	17%
Wessex Water: combined	30%	29%	38%	39%
Yorkshire Water: combined	26%	25%	28%	31%

Table 15.3 shows that the combined efficiency gap between Scottish Water and the benchmark companies (Yorkshire Water and Wessex Water) under all four sets of models is between 25% and 39%. This result indicates that Scottish Water would need to reduce its operating costs by between 25% and 39% to be at the same level of efficiency as the benchmark companies. The models generate broadly similar results.

This analysis does not take account of a number of factors that could affect the size of the efficiency gap. We have adjusted our calculation of the efficiency gap to take account of special factors and differences in the scope of services provided.

Impact of special factors

In this draft determination we have reviewed evidence on Scotland-specific factors that we should take into account in our assessment of the efficiency gap. These special factors are company specific, so cannot be incorporated into Ofwat's econometric models. They must be beyond management control.

We have carefully reviewed the evidence provided by Scottish Water and have decided that allowances for the following special factors are justified:

central regulatory laboratory;

- travel in rural areas;
- · electricity charges;
- bad debt;
- sewer laterals;
- · waterworks sludge recycling; and
- public septic tanks.

We have adjusted the efficiency gap calculated using the modified Ofwat models. We believe that the modified models provide a more accurate indication of Scottish Water's relevant efficiency than the model that excludes Scottish information. It is not possible to apply the adjustment using the alternative models because we do not have disaggregated information on special factors for the English and Welsh companies. Table 15.4 sets out the adjusted efficiency gap.

Table 15.4: Efficiency gap adjusted for special factors

	Modified Ofwat models
Average: water service	11%
Wessex Water: water service	25%
Yorkshire Water: water service	19%
Average Waste water service	15%
Wessex Water: waste water service	27%
Yorkshire Water: waste water service	23%
Average: combined	13%
Wessex Water: combined	26%
Yorkshire Water: combined	21%

Impact of differences in scope

The overall effect of adjustments to reflect differences in scope on the efficiency gap is illustrated in Table 15.5.

Table 15.5: Efficiency gap adjusted for differences in scope

	Modified Ofwat models ¹³¹
Wessex Water: water service	32%
Yorkshire Water: water service	28%
Wessex Water: waste water service	29%
Yorkshire Water: waste water service	24%
Wessex Water: combined	31%
Yorkshire Water: combined	26%

We have not been able to adjust Scottish Water's measured efficiency to reflect its poorer customer service. Instead we have had to set milestones for customer service improvement during the regulatory control period.

Adjusted efficiency gap – scope and timeframe for improvement

Our adjustments for differences in the scope of activities and special factors have ensured that we have made a robust assessment of the efficiency gap. We also considered the extent to which this gap could be closed during the 2006-10 regulatory control period.

At its 2004 price review, Ofwat assumed that companies should close 60% of the efficiency gap to the frontier company. Our view is that this also represents a reasonable target for Scottish Water. We have also adopted the Ofwat assumption on the pace of improvement that should be achieved by the best performing companies.

Scottish Water continues to improve its operating cost efficiency performance. We have set the allowed for level of operating cost for the first year of the new regulatory control period, 2006-07, to reflect the improvement that Scottish Water expects to have achieved by 2005-06.

New operating costs 2006-10

Scottish Water will incur 'new' operating expenditure in meeting the Ministers' objectives for the industry for the next regulatory control period:

- environmental standards;
- drinking water standards;
- levels of service to customers; and
- the supply/demand balance.

We have carefully scrutinised Scottish Water's estimates of new operating expenditure. Ofwat's view is that it is easier for an organisation to deliver efficiency savings in new operating expenditure than in baseline operating expenditure. We agree with this view, as it should be easier to identify the lowest cost approach for a new activity than to find ways to reduce an existing cost. We have therefore set higher efficiency targets (in percentage terms) for new operating expenditure than for baseline operating expenditure.

We have allowed for the new operating expenditure for the 2006-10 regulatory control period outlined in Table 15.6^{132} .

Table 15.6: Allowed for new operating expenditure 2006-10 (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
New operating expenditure	£1.1m	£3.0m	£4.7m	£12.2m

Total allowed for operating expenditure

The total allowed for operating expenditure is calculated as set out in Figure 15.1.

¹³¹ It is not possible to calculate the efficiency gap adjusted for differences in scope relative to the average company in England and Wales. This is because the information required is unavailable for some English and Welsh companies.

¹³² The new operating expenditure allowances shown here are before efficiencies.

Figure 15.1: Calculating the allowed for level of operating costs

Total allowed for operating expenditure

=

Baseline operating expenditure
+/
assessed changes in baseline operating expenditure

efficiencies in baseline operating expenditure
+

new operating expenditure

efficiencies in new operating expenditure
+

PPP operating expenditure¹³³
+

the impact of annual inflation on all of these components

We have set the profile for Scottish Water's allowed for level of operating expenditure for the 2006-10 regulatory control period outlined in Table 15.7.

Table 15.7: Summary of allowed for total operating costs for 2006-10¹³⁴

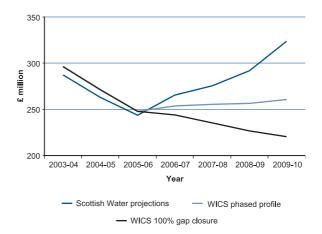
		2006-07	2007-08	2008-09	2009-10
	Baseline operating expenditure	£296.5m	£296.5m	£296.5m	£296.5m
Less	Efficiencies in the baseline	£53.0m	£53.8m	£54.7m	£55.6m
Plus	Assessed changes to baseline operating expenditure	£10.2m	£11.6m	£13.1m	£13.1m
Less	Efficiencies in assessed changes to the baseline	£0.9m	£1.4m	£2.1m	£2.6m
Plus	New operating expenditure	£1.1m	£3.0m	£4.7m	£12.2m
Less	Efficiencies in new operating expenditure	£0.1m	£0.4m	£0.9m	£2.9m
Equals	Sub total operating expenditure	£253.9m	£255.4m	£256.6m	£260.8m
Plus	PPP operating expenditure	£116.0m	£116.0m	£117.9m	£121.3m
Plus	Inflation ¹³⁵ from 2003-04	£22.6m	£30.6m	£39.0m	£48.2m
Equals	Total allowed operating expenditure	£392.5m	£402.0m	£413.5m	£430.3m

Comparison with Scottish Water's projections of operating costs

In its second draft business plan, Scottish Water said that it would incur a significant increase in its operating costs. Figure 15.2 illustrates the difference between its

forecast level of operating costs and the level of operating cost that we have allowed for. We also show the scope that we believe Scottish Water has to outperform our assessment. The scope for this outperformance has been calculated with reference to the expected performance of the benchmark companies.

Figure 15.2: Comparison between the allowed for operating cost, the scope to outperform and Scottish Water's projection¹³⁶ (in 2003-04 prices)



Conclusion

We have set total allowed for operating expenditure (excluding PPP and inflation) of £254 million in 2006-07, rising to £261 million by 2009-10. The allowance for 2009-10 is some 20% less than Scottish Water said that it needed in its second draft business plan. We consider, however, that the level of operating expenditure we have set is sufficient for Scottish Water to deliver Ministers' objectives for the water industry in the 2006-10 regulatory control period. It also provides scope for management to out-perform and, as such, achieving this level of operating cost represents the minimum level of performance by Scottish Water that we would consider to be acceptable.

¹³³ PPPs have also made an important contribution to Scottish Water's capital programme. This contribution is discussed more extensively in Volume 5, Chapters 11-14.

¹³⁴ Numbers may not add exactly, due to rounding.

¹³⁵ We have assumed annual inflation of 2% between 2003-04 and 2009-10.

¹³⁶ We have used Scottish Water's regulatory accounts for 2003-04 to calculate operating expenditure in that year. This figure is higher than that reported by Scottish Water in its business plan submission, which is why our figures for 2003-04 to 2005-06 are higher than Scottish Wate's.

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The Strategic Review of Charges 2006-10: The draft determination

Setting charge caps



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Executive summary

Introduction

This volume sets out our preliminary views on the revenue required by Scottish Water for the 2006-10 regulatory control period. It also sets out the impact of this level of revenue on customers' charges. We explain in detail how we have set both the required level of revenue and the corresponding charge caps. We also describe the assumptions we have used in our financial modelling.

We have set these caps at a level which ensures that Scottish Water's revenue is sufficient to meet the expenditure required for the effective exercise of its core functions. At the same time the charges are set no higher than is necessary to ensure that if Scottish Water were to perform in line with the assumptions in this draft determination, it could comply with all of the same cash-based financial ratios that Ofwat used for the companies in England and Wales in its 2004 final determination¹. This ensures that the interests of both current and future customers have been taken into account.

One of the key issues that we address in this volume is the impact of the separation of retail activities for nonhousehold customers². We explain how we have set appropriate charge caps for both the wholesale and retail activities.

Finally, we consider the impact of the proposed charge caps on customers and the prospects for future charges.

Financial modelling

The Ministerial Guidance which we received in February 2005 required us to ensure that the charges we set for this regulatory control period would not disadvantage future customers. Ministers also wanted Scottish Water's financial strength to be improved, if possible, over the 2006-10 regulatory control period. We have adopted the same financial ratios that Ofwat used to assess the financial sustainability of the water industry south of the border.

The financial ratios that we have used are summarised in Table 1.

Table 1: Financial ratios used in this draft determination

Financial ratio	Targeted value
Cash interest cover	Around 3 times
Adjusted cash interest cover	Around 1.6 times
Funds from operations: debt	Greater than 13%
Retained cashflow: debt	Greater than 7%
Gearing	Less than 65%

We have focused on the cash-based financial ratios. However, we have ensured that the debt to regulatory capital value (RCV)³ ratio improves over the regulatory control period.

Development of the model

We developed the model using our own in-house staff. The model has been subject to rigorous internal analysis to ensure that the results are consistent with our expectations when inputting test information. We also asked Ernst & Young LLP to review both the initial and final versions of the financial model.

Assumptions in the model

In this draft determination we have used two indices to take account of cost inflation, namely:

- the consumer price index (CPI) for all non-asset costs; and
- the construction output price index (COPI), to assess the impact of increases in prices on investments.

CP

We believe that the CPI is an appropriate measure of inflation for non-capital goods costs. The CPI is now the measure of inflation that is used as a target measure by the Government and the Bank of England. We have assumed that CPI will be 2% for each year of the regulatory control period. This is in line with the Bank of England's target.

- Office of Water Services, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.
- ² This separation of activities is a result of the Water Services etc. (Scotland) Act 2005. This Act was described in detail in Volume 2.
- Compliance on the funds from operations divided by total net outstanding debt has been set at the minimum level for compliance. This ratio effectively determined the initial RCV.
 PAGE 3

COPI

We have used COPI to analyse the effect of inflation on capital expenditure. COPI measures the movement in prices of construction projects. We have used the 'all new construction output index' in this draft determination. We have set COPI at 3% a year.

Working capital and other balance sheet assumptions

Our assumptions are outlined in Table 2.

Table 2: Balance sheet assumptions

Title	Assumption	Value for 2006-10
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure, excluding PPP	1.5%
Prepayments and accrued income	Percentage of previous year's revenue	5.5%
Other debtors	Percentage of previous year's revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25.60%
Accruals and deferred income	Percentage of operating expenditure, including PPP	28.0%
Other creditors	Percentage of operating expenditure, including PPP	8.0%
Cash	Balance held by Scottish Water	£2 million

Monitoring financial performance

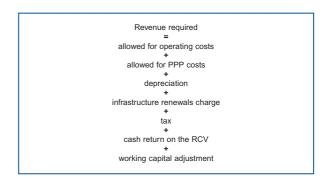
Our approach to charge setting in this draft determination has simplified how we monitor Scottish Water's financial performance. We can monitor progress by reviewing Scottish Water's financial indicators with those predicted by the financial model.

This draft determination assumes that Scottish Water should be capable of delivering the outputs required in the Ministerial Guidance, meeting the milestones for customer service improvement and complying with each of the targeted financial ratios in 2009-10.

Calculation of the revenue cap

The calculation of the required level of revenue

In Volume 5, we explained that we have moved towards the RCV approach to charge setting. Under this approach, the revenue requirement is calculated by:



We used the financial model to identify the cash return on the RCV required by Scottish Water in 2009-10. The rate of return and the embedded debt allowance were both fixed, so we were able to determine the RCV that we required in 2009-10 and the implied initial RCV⁵. The constraint was that Scottish Water should comply in 2009-10 with all of the targeted cash-based financial ratios. In practice, of course, Scottish Water will only comply with all of these financial ratios if it were to satisfy all of the assumptions underpinning this draft determination.

Table 3 sets out the RCV in each year of this regulatory control period.

Table 3: Calculation of RCV in each year of this regulatory control period (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Plus Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
Plus New investment	£534.3m	£593.0m	£633.3m	£689.5m
Less Depreciation	£187.2m	£211.2m	£230.7m	£252.3m
Less Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Less Disposal of Assets	£1.0m	£1.1m	£1.1m	£1.1m
Equals Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

⁴ Cash received from the disposal of assets is deducted from the revenue requirement.

The initial RCV was backwards calculated taking account of capital expenditure, depreciation, inflation and tax payable.

Inputs to the calculation of the required level of revenue

Allowed for operating costs

We have input the total allowed for operating costs for both the water and the waste water services. The total allowed for level of operating costs includes:

- baseline costs:
- additions to the baseline:
- new operating costs;
- the scope for efficiency; and
- the impact of inflation.

Total allowed for operating costs are set out in Table 4.

Table 4: Total allowed for operating costs (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total water operating costs	£150.5m	£153.8m	£157.5m	£163.6m
Total waste water operating costs	£117.5m	£121.1m	£124.3m	£128.5m
Additional Retail Costs	£4.1m	£2.6 m	£2.1m	£1.6m
Total allowed for operating costs	£272.1m	£277.6m	£283.9m	£293.8m

Allowed for PPP costs

The required level of revenue takes into account the costs of PPP contracts. In Table 5, we show the original costs expected to be incurred in relation to the contracts that were signed by the three former water authorities. The table also shows the new additional costs incurred as a result of extra investment that is now required and which does not appear to have been foreseen when the original contracts were signed.

Table 5: Total allowed for costs for PPPs

Total allowed for costs for PPPs	2006-07	2007-08	2008-09	2009-10
Original contract costs	£121.4	£123.8m	£126.3m	£128.8m
Additional costs resulting from additional investment	£1.0m	£1.0m	£3.2m	£7.0m
Total allowed PPP costs	£122.4m	£124.8m	£129.5m	£135.8m

Depreciation

We input information on depreciation of the modern equivalent asset value of existing assets and an appropriate charge for new assets that are added during the regulatory control period. We have also input an infrastructure renewals charge, which we have set equal to the expected infrastructure renewals expenditure. The depreciation and infrastructure renewals charges are set out in Table 6.

Table 6: Depreciation and infrastructure renewals charges

Depreciation category	2006-07	2007-08	2008-09	2009-10
Current cost depreciation of existing assets	£178.8m	£184.2m	£182.3m	£180.1m
Current cost depreciation of new assets (after 1st April 2006)	£8.3m	£27.0m	£48.4m	£72.2m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Total depreciation and infrastructure charges	£275.7m	£302.4m	£324.7m	£349.1m

Tax

We have taken a conservative approach to the corporation tax that may be payable by Scottish Water (i.e. the highest tax liability to be incurred during this regulatory control period). Our approach takes account of the introduction of International Accounting Standards. It may no longer be possible to claim the infrastructure renewals charge as a taxable expense. This would increase the tax payable in the next few years, although there would be no difference in the total tax payable over the life of the assets.

The tax payable is shown in Table 7.

Table 7: Corporation tax payable 2006-10 (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Corporation tax payable	£0.0m	£15.5m	£26.8m	£14.8m

Cash return on the regulatory capital value

This is the product of the RCV in each year and the allowed rate of return. We have also added the cost of embedded debt, which had a coupon above 4.6%.

Our regulatory capital value takes account of the overhang from Quality and Standards II and the capital expenditure required to deliver both the Ministers' 'essential' and 'desirable' objectives for the industry. The allowed level of capital expenditure also takes account of the unsubstantiated claim for efficiency by the former East of Scotland Water Authority.

Scottish Water will have to deliver a significant investment programme during this regulatory control period if it is to meet all of the objectives set by Ministers. This programme is set out in Table 8.

Table 8: Required investment programme (outturn prices)

Investment category	2006-07	2007-08	2008-09	2009-10
Overhang from Quality and Standards II	£243.7m	£30.9m	£0.0m	£0.0m
Infrastructure renewals expenditure	£88.6m	£91.2m	£94.0m	£96.8m
Other investment (including additional retail investment)	£202.1m	£470.9m	£539.4m	£592.7m
Total investment	£534.3m	£593.0m	£633.3m	£689.5m

Asset disposals are not expected to be very material. Our estimates have taken account of the level of asset sales made by Scottish Water. We have also taken account of experience from south of the border.

Our assumptions are outlined in Table 9.

Table 9: Asset disposals and cash proceeds (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Asset disposals (historic cost net Book Value)	£1.0m	£1.0m	£1.0m	£1.0m
Cash proceeds from asset disposals	£1.0m	£1.0m	£1.0m	£1.0m

Revenue caps

The revenue that we propose to allow Scottish Water in each year of the regulatory control period is set out in Table 10. In line with the Ministerial Guidance, we have smoothed the change in revenue. We have estimated real increases using an assumed 2.5% increase in the retail price index (RPI).

Table 10: Revenue caps 2006-10

	2005-06 ⁶	2006-07	2007-08	2008-09	2009-10
Operating costs		£272.1m	£277.6m	£283.9m	£293.8m
PPP charge		£122.4m	£124.8m	£129.5m	£135.8m
Current cost depreciation ⁷		£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge		£88.6m	£91.2m	£94.0m	£96.8m
Cash return on the RCV ⁸		£148.9m	£163.6m	£178.9m	£195.7m
Embedded debt allowance		£33.8m	£32.3m	£30.7m	£29.1m
Tax		£0.0m	£15.5m	£26.8m	£14.8m
Calculated revenue		£852.9m	£916.2m	£974.5m	£1,018.2m
Financeability adjustment		£129.7m	£89.3m	£34.7m	£0.0m
Total revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Year on year increase (nominal)		1.82%	2.33%	0.36%	0.90%
Year on year increase (real)		-0.68%	-0.17%	-2.14%	-1.60%

The revenue caps set out above show that Scottish Water's overall financial health – as measured by the debt to RCV ratio – improves modestly over the regulatory control period.

In Table 11 we set out the value of each targeted ratio for each year of this regulatory control period.

Revenue for 2005-06 was determined using a cash-based approach, we therefore do not break it into the components of an RCV-based approach.

⁷ Includes depreciation on disposal of non-infrastructure assets.

⁸ Includes working capital adjustment.

Table 11: Financial performance 2006-10

Financial Ratio	Targeted value	2006-07	2007-08	2008-09	2009-10
Cash interest cover	Around 3 times	3.7	3.9	3.6	3.5
Adjusted cash interest cover	Around 1.6 times	2.5	2.6	2.2	2.0
Funds from operations: debt	Greater than 13%	15.9%	16.3%	14.1%	13.0%
Retained cashflow: debt	Greater than 7%	15.9%	16.3%	14.1%	13.0%
Gearing	Less than 65%	67.0%	64.6%	63.9%	63.8%

Public expenditure

The revenue caps set out above require Scottish Water to take on considerable new debt during the next four years. This net new debt counts as public expenditure. In the February⁹ Ministerial Guidance, Scottish Water was allowed £182 million of public expenditure a year. The Minister also allowed Scottish Water to carry forward any unused public expenditure from the 2002-06 regulatory control period.

The use of public expenditure is summarised in Table 12.

Table 12: Public expenditure 2006-10 (outturn prices)

		2006-07	2007-08	2008-09	2009-10
2002-06 carry over	£256.0m				
Available public expenditure at start of year (including carry-over)		£438.0m	£495.4m	£529.4m	£493.2m
Public expenditure used		£124.6m	£148.0m	£218.2m	£270.6m
Unused public expenditure at year end		£313.4m	£347.4m	£311.2m	£222.6m

It was not possible to increase the use of public expenditure and to comply fully with all of the cash-based financial ratios in each year.

We examined the impact on charges in the current and future regulatory control periods if we allowed Scottish Water to comply with all of the cash-based ratios except 'funds from operations divided by debt'. The rationale for allowing this ratio to be breached would be that Scottish Water is funded entirely by customer charges and debt and there is no indication that the Scottish Executive

Our analysis has shown that a further small reduction in real terms in the level of charges faced by customers in this regulatory control period would have been possible. However, this would have made increases above the rate of inflation more likely in the next period. It would also reduce the affordability of future investment programmes. We analysed the prospects for charges and public expenditure on the assumption that a further £2,100 million of investment would be required.

Table 13 summarises this analysis.

may seek to require Scottish Water to pay a dividend on any retained earnings. From this standpoint, complying with this ratio could be regarded as challenging.

⁹ See Guidance on principles of charging, Appendix 4.

Table 13: Effect of not complying with the funds from operations/debt ratio (outturn prices)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Revenue Required (full compliance) ¹⁰	£983.7m (1.82%)	£1,005.5m (2.33%)	£1,009.2m (0.36%)	£1,018.2m (0.90%)	£1,063.3m (4.43%)	£1,110.5m (4.43%)	£1,159.6m (4.43%)	£1,211.0m (4.43%)
Revenue Required (not including funds from operations) ¹¹	£953.0m (-1.25%)	£941.1m (-1.25%)	£929.3m (-1.25%)	£917.7m (-1.25%)	£1,064.5m (16.00%)	£1,128.4m (6.00%)	£1,230.0m (9.00%)	£1,365.3m (11.00%)
Public Expenditure (full compliance)12	£124.6m	£148.0m	£218.2m	£270.6m	£192.7m	£184.4m	£221.7m	£278.8m
Public Expenditure (not including funds from operations)	£154.9m	£195.2m	£271.2m	£362.5m	£180.6m	£179.3m	£180.7m	£182.0m

We recognise that we will not have used all of the public expenditure available. However, we believe that it would not have been in the interests of customers to increase borrowing further in this regulatory control period. That may have resulted in a marginally lower charge profile today but would have led to less charge stability in the next regulatory control period. Our view is that such an approach would have been inconsistent with the Ministerial Guidance¹³.

We also believe that the Scottish Executive's Environment and Rural Affairs Department should hold £40 million of the unused public expenditure in reserve. 14 This may be required to bridge the period between extra costs that are outside the control of management being incurred and the threshold for an interim determination. This lending should only be made available to Scottish Water with the agreement of the new Water Industry Commission.

Full details of how this might work out have still to be developed. However, there should be a requirement to lodge prior notification to the new Commission in advance of this request.

Revenue and investment comparisons with England and Wales

Revenue per connected property

Table 14 compares the revenue allowed to Scottish Water on a per connected property basis with that which is allowed to the water and sewerage companies south of the border.

Table 14: Estimated revenue per connected properties 2005-10 for all water and sewerage companies in Great Britain

	Average Revenue 2005-10 ^{15,16}	Average Properties ¹⁷	Average Revenue per property
Scottish Water	£897m	2.30m	£389
Anglian	£812m	2.21m	£368
Welsh	£542m	1.30m	£417
Northumbrian	£514m	1.49m	£345
Severn Trent	£1,127m	3.50m	£322
South West	£361m	0.70m	£516
Southern	£550m	1.42m	£387
Thames	£1,333m	4.42m	£302
United Utilities	£1,238m	2.97m	£417
Wessex	£337m	0.82m	£411
Yorkshire	£700m	2.06m	£340

The allowed revenue for Scottish Water on an average per connected property basis is £389. In the comparisons above, Scottish Water benefits from a lower

¹⁰ Full compliance in the last year of each regulatory control period (2010 and 2014).

¹¹ Public expenditure limit increases the amount of revenue required from customers.

¹² Public expenditure unused in the 2006-10 regulatory control period is carried forward to 2010-14.

¹³ See 'Guidance on Principles of Charging', Appendix 4.

¹⁴ We discuss this issue in detail in Chapter 6.

Ofwat did not disaggregate revenue or the number of properties on a year-on-year basis. Instead, it used the entire 2005-10 period. As such, Scottish Water's calculations also include 2005-06 revenue and properties for comparison purposes.

Ofwat's final determinations use the 2002-03 price base, therefore revenue figures were indexed by the financial year average RPI to obtain 2003-04 prices.

 $^{^{\}rm 17}$ $\,$ Simple average between water and waste water billed connections.

cost of capital than is available to the equity financed companies south of the border. If we were to adjust for the impact of the private sector cost of capital, Scottish Water's revenue per connected customer increases to £446. This would make Scottish Water's revenue per connected property the second highest in Great Britain.

Total level of investment

Total investment in this regulatory control period amounts to £2.1 billion (2003-04 prices) after efficiency. This is an increase of 12.4% in real terms and 27.3% in nominal terms from the 2002-06 regulatory control period. This investment programme is without precedent in Scotland.

The total investment to be delivered in Scotland stands comparison with the likely level of investment south of the border in the same period. This is illustrated in Table 15.

Table 15: Planned investment for Scottish Water and for the largest companies in England and Wales (2003-04 prices)

(Figures in 03-04 prices) ¹⁸	2005-06	2006-07	2007-08	2008-09	2009-10	Total (2005-10)	Total (2006-10)
Anglian	£271m	£325m	£353m	£315m	£282m	£1,545m	£1,275m
Severn Trent	£415m	£495m	£501m	£457m	£475m	£2,343m	£1,928m
Thames	£688m	£725m	£645m	£615m	£615m	£3,289m	£2,601m
United Utilities	£553m	£635m	£593m	£461m	£392m	£2,635m	£2,082m
Yorkshire	£357m	£318m	£309m	£295m	£247m	£1,526m	£1,169m
Scottish Water	£583m	£485m	£517m	£534m	£564m	£2,683m	£2,100m

¹⁸ Source: Ofwat RD07/05, 'Regulatory capital values 2005-10', 22 April 2005. Figures were deflated by COPI to 2003-04 prices.

Investment per connected property

Scottish Water's investment programme is very large relative to its total number of connected properties. This is shown in Table 16.

Table 16: Total investment per connected property in 2005-10 (2003-04 prices)

	Total investment (2005-10)	Average number of connected properties (2005-10) ¹⁹	Total investment per connected property (2005-10)
Anglian Water	£1,545m	£2.21m	£701
Dwr Cymru	£1,218m	£1.30m	£937
Northumbrian Water	£891m	£1.49m	£598
Severn Trent Water	£2,343m	£3.50m	£669
South West Water	£811m	£0.70m	£1,158
Southern Water	£1,663m	£1.42m	£1,171
Thames Water	£3,289m	£4.42m	£744
United Utilities Water	£2,635m	£2.97m	£887
Wessex Water	£804m	£0.82m	£981
Yorkshire Water	£1,526m	£2.06m	£740
Scottish Water	£2,683m	£2.30m	£1,164

Interim determinations and the logging up and down process

An interim determination is a reconsideration of a firm's price limits that could be undertaken between formal price reviews. The reconsideration is carried out in the light of a particular set of circumstances or factors outside management control that were not taken into account at the previous review. Either the firm or the regulator may initiate an interim determination.

Currently, under the outgoing regime (pursuant to the Water Industry (Scotland) Act 2002) the Water Industry Commissioner for Scotland provided advice to the Scotlish Ministers on charges. Ministers can commission advice whenever they considered it necessary. In this framework, there has been no need for a specific process for interim determinations since it has been for Ministers to judge when advice needed to be revisited.

When the provisions in the 2002 Act, which were inserted by the Water Services etc. (Scotland) Act 2005

are commenced, it will be the role of the new Water Industry Commission to ensure that Scottish Water delivers the objectives of Ministers at the lowest reasonable cost. Scottish Water has to be able to recover the costs of any unexpected expenditure during a regulatory control period that results from unforeseen circumstances outside management control (rather than from under-performance).

It is important to differentiate between cost problems which arise and are reasonably within the control of managers, and those that are genuinely outside the control of management. The regulatory framework needs to be able to respond in an effective and timely way to unexpected costs that are outside the control of management. This will be achieved through the interim determinations process. We have set out our view of the major uncertainties by publishing a list of notified items with this draft determination (see below).

It is, however, for the Scottish Executive to decide on an appropriate course of action if Scottish Water does not perform at the level assumed in the determination of charges as a result of factors that are within its control. Our view is that customers should not be asked to pay twice for the same outputs.

Examples of factors that we would consider to be within and outside the control of management are outlined in Table 17.

Table 17: Examples of factors within and outside the control of management

Within management's control	Outside management's control
Obtaining planning permission	Changes in planning law
Inflation risks caused by advancing or delaying the delivery of the investment programme	Capital inflation difference on planned schedule of investment delivery
	Legal changes
	Price increases caused by regulatory settlements for electricity (to the extent not captured in inflation indices)

We have set the same threshold²⁰ for an interim determination as that which is set by Ofwat for the companies in England and Wales. If the threshold is reached, either Scottish Water or the Commission could

¹⁹ Simple average between water and waste water connections.

²⁰ Effect must exceed 10% of allowed revenue when calculated as the NPV over 10 years for operating costs, 15 years for revenue or capital expenditure.

initiate the interim determination process. We noted that Ministers should be prepared to increase their lending to Scottish Water up to the maximum reserve of £40 million if the new Water Industry Commission agreed that the costs incurred were outside the control of management and that additional lending was an appropriate response. In this regard, we would note that there appears to be quite ambitious assumptions on the likely customer takeup of some outputs in the funded investment programme, which may reduce (perhaps entirely) the need for Scottish Water to access this reserve public expenditure²¹.

In the event that an interim determination is not triggered, any variances in costs that are outside the control of management would be taken into account at the next Strategic Review of Charges.

Notified items

The notified items for this draft determination are set out in Table 18.

Table 18: Notified items for the Strategic Review of Charges 2006-10

Notified items
Inflation rates (COPI and CPI)
The definition of retail activities in the regulatory accounts.
Changes in ministerial objectives for the industry
Any change in legislation that has an impact on Scottish Water's statutory obligations
Changes in the numbers of metered customers from the 2004-05 baseline
Contractual status of overhang, and whether costs will increase by inflation
Corporation tax
Outcome of strategic drainage studies of the catchments for Meadowhead, Stevenston and Portobello

How we propose to deal with out-performance by Scottish Water

All of the UK economic regulators use an incentivebased approach to determining charges. Under this approach, the regulator analyses the scope for the regulated company to improve its performance and sets appropriate charge caps. A determined management may out-perform the determination of charges and, in doing so, will benefit shareholders (for private companies) or customers (as in the case of the not-fordividend Welsh company, Glas Cymru). However, such out-performance will also raise the level of performance that is expected at future reviews. It is this 'ratchet' effect that has resulted in the significant efficiency gains that have taken place south of the border.

A key element of incentive-based regulation is ensuring that the regulated company faces a tight budgetary constraint. It is this pressure that will force management to seek to improve efficiency.

In the private sector, regulators rely on shareholders to exert pressure on management to out-perform efficiency targets. More recently, however, the creation of the not-for-dividend companies Glas Cymru and Network Rail has led regulators to consider the impact of incentive-based regulation on companies that do not have shareholders.

The founders and senior management of Glas Cymru made a commitment to create a reserve with the proceeds of out-performance. They also committed themselves to using some of the proceeds from out-performance to provide rebates to customers within the regulatory control period. Rebates were paid as soon as the company was in a strong financial position. Glas Cymru's customers have enjoyed two such rebates. We believe that from a customer perspective there is much to commend this approach.

In this draft determination, we have built on Glas Cymru's approach while taking full account of Scottish Water's particular circumstances. We set out our approach to handling out-performance in our second open letter to Scottish Ministers in May 2005.

Our view is that Scottish Water should be capable of outperforming the minimum acceptable level of performance that we have assumed in this draft determination. We would trust that Scottish Water would want to accept a lower charge cap in future years if it has been able to out-perform the determination of charges. As we explain later, foregoing part of the charges cap in one year does not mean that this may not be taken up later if the need arose.

²¹ For example, the lead pipe replacement programme.

Clearly, it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the exceptional performance. This will require the Executive, Scottish Water and the quality regulators (the Drinking Water Quality Regulator and the Scottish Environment Protection Agency) to establish satisfactory ways to measure delivery of specified outputs. The success of Scottish Water's management should be judged by the extent to which it delivers, as a minimum, the outputs that we have financed in this draft determination.

The detail of any incentives for Scottish Water's managers would be a matter for the Executive and Scottish Water to settle in the particular context of a publicly owned business. Our view is that, from a customer perspective, any approach would need to be founded on the principle of bonuses only being paid once Scottish Water's performance had exceeded the minimum acceptable level of performance set in the final determination of Scottish Water's charges. In our view, there will need to be a direct and transparent link, published in advance, between the bonuses that are available to senior management and improvements beyond the minimum acceptable level of performance.

Risk analysis

Our risk analysis has identified the likelihood that the Scottish Executive could face an incidence of underperformance by Scottish Water that was within the control of management (and hence an interim determination would not be appropriate). It has also identified the risk that an interim determination may be required.

In this draft determination we have made a number of assumptions. The most material of these assumptions are set out in Table 19. These are separated into factors that are within and those that are outside the control of management.

Table 19: Factors inside and outside management control

Within management control	Outside management control
Operating costs: efficiency efficiency and incidence of new operating costs efficiency and incidence of additional baseline operating costs	Consumer prices index (CPI)
Capital expenditure: • efficiency scope of agreed programme	Construction outputs pricing index (COPI)
	Exogenous shocks: change in outputs required changes in legislation other factors likely to trigger an interim determination

We have measured exogenous shocks with reference to the frequency and outcome of interim determinations that have taken place south of the border.

Results of our risk analysis (costs that are within the control of management)

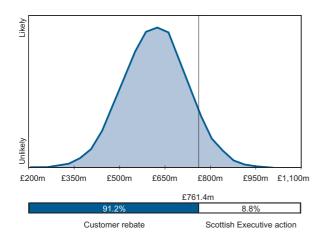
We have calculated the likelihood that Scottish Water should be in a position to deliver rebates to customers from the level of charge caps that we have set in this draft determination²². The converse is the potential requirement for the Scottish Executive to have to manage under-performance in relation to the draft determination.

²² This is discussed in more detail in Chapter 8

We have modelled a range of options where Scottish Water's efficiency varies from that of a below average company south of the border to an average company south of the border. Figure 1 shows that the most likely outcome is that Scottish Water would require a cumulative total of £618 million of new debt by the end of 2009-10. This outcome would be consistent with rebates to customers during the regulatory control period, since the allowance in charge limits for new debt is £761 million. The analysis also indicates that the risk of the Scottish Executive having to address a failure to perform at least in line with the draft determination is low, at less than 9% and this could be if Scottish Water's performance was significantly below that of a poor performance company south of the border²³.

In our view this highlights just how stable and predictable the water industry is. As we will see when we look at the impact of exogenous shocks and inflation (from which Scottish Water is fully protected because of the interim determination process) the main financial risks are borne by customers.

Figure 1: Impact of operating and capital expenditure risks and inflation risks (independently) on the likelihood of customer rebates or of Scottish Executive action



Results of our risk analysis (costs that are outside the control of management)

We have calculated the likelihood that externally driven costs (inflation or an exogenous shock) could be sufficiently material to warrant an interim determination.

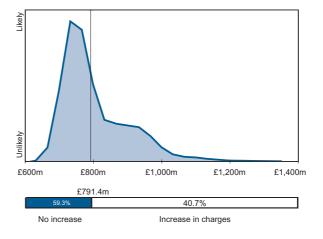
We applied a pessimistic assumption that the capital programme would be equal to the higher estimate that we have used in setting prices (£2.1 billion at 2003-04 prices). We set out the results of combining uncertainties in CPI, COPI and our assumed risk profile of exogenous²⁴ shocks in Figure 2. This shows the expected position in 2009-10. The chance of Scottish Water incurring unforeseen expenses that may breach the materiality threshold for an interim determination is around 41%.

It is important to put this risk into perspective. It says that if:

- the capital programme outturns at £2.1 billion;
- Scottish Water experiences exogenous shocks similar to those that have occurred south of the border²⁵; and
- there are adverse swings in CPI and COPI relative to RPI:

then there is still around a 59% chance that an interim determination to increase prices would not be required. Again, this would seem to emphasise the predictable nature of the water and sewerage industry.

Figure 2: Impact of factors outside management control on the likelihood of breaching new borrowing allowed in price limits – high capital investment programme scenario



Our analysis in Volume 5 suggested that a capital programme of £2.1billion post efficiency was reasonable. This risk analysis assumes that the capital programme is £2.1 billion and that Scottish Water operate in an effective regulatory framework with appropriate incentives to perform.

These shocks (scaled to the size of Scottish Water) range from £30 million to £220 million.

²⁵ See Chapter 8. PAGE 13

Calculation of wholesale revenue

The wholesale revenue cap includes both the revenue from the retail charge caps set for household customers and the purely wholesale revenue that will be paid to Scottish Water by its retail subsidiary.

We used the accounting method²⁶ to calculate the costs that Scottish Water's retail subsidiary would incur in serving non-household customers. Scottish Water and its retail subsidiary are both likely to incur additional costs as a result of it becoming separate businesses. These costs are likely to include carrying out new activities, or carrying out existing activities under different operating conditions. However, there is also likely to be increased scope for efficiency.

One of the most important new costs would be the cost of capital of the retail subsidiary. This has to be set at a level that would not disadvantage potential new entrants. We therefore commissioned Ernst & Young LLP to advise on an appropriate cost of capital for Scottish Water's retail subsidiary²⁷. They advised that a reasonable weighted average cost of capital (WACC) for the new retail business is between 8.2% and 9.4% nominal pre-tax. The cost of equity is assumed to be 12% and the cost of debt is assumed to be 6%. This compares with our hybrid WACC of 4.13% for Scottish Water's core business.

Summary of costs

The increase in total costs (core and retail combined) as a result of the separation of the retail activities is set out in Table 20.

Table 20: Impact on total costs of separation of retail activities (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Increased operating costs – retail	£0.73m	£0.80m	£3.93m	£3.95m
Increase operating costs – wholesale	£0.26m	£0.22m	£1.12m	£1.09m
Increased cost of capital	£3.15m	£3.72m	£3.83m	£3.83m
Increased tax	£0.50m	£0.50m	£0.50m	£0.50m
Wholesale efficiencies ²⁸	-£0.57m	-£2.63m	-£4.28m	-£5.94m
Retail efficiencies ²⁹	£0.00m	£0.00m	-£2.45m	-£2.35m
Total additional operating expenditure	£4.08m	£2.60m	£2.65m	£1.08m

We have added these costs to the financial model in setting the revenue cap.

The revenue cap for the wholesale business is set out in Table 21.

²⁶ This method was described in Volume 3 of our methodology consultation.

²⁷ Ernst & Young LLP, 'Cost of capital report for the Water Industry Commissioner for Scotland' (May 2005). See Appendix 8.

We believe that there is scope to accelerate the improvement in operating cost efficiency in both the wholesale and retail business after separation. There is evidence from both the electricity and gas industries that disaggregation of the value chain has identified a number of activities (conducted by the vertically integrated monopoly) that were not adding value. Separate studies by Professor Littlechild and Cambridge Econometrics (highlighted in Volume 4) have shown the improvement in operating cost efficiency that can be achieved through separation. Our estimates assume that less improvement is available in the Scottish water industry than the ex post analysis of the electricity industry might suggest.

²⁹ As above.

Table 21: Revenue cap for the wholesale business (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total non-household revenue	£326.7m	£330.1m	£327.1m	£329.4m
Retail Margin	-£32.72m	-£35.5m	-£36.4m	-£36.3m
Non-household wholesale revenue	£294.0m	£294.6m	£290.6m	£293.2m
Household revenue	£642.0m	£661.2m	£667.5m	£673.8m
Secondary revenue	£13.9m	£14.2m	£14.6m	£15.0m
Total Revenue	£949.9m	£970.1m	£972.8m	£982.0m

Introduction of tariff baskets

We use tariff baskets to translate the revenue cap into retail charge caps. We have established ten tariff baskets to cover the core services provided by Scottish Water. These tariff baskets will ensure that the removal of the £44 million cross subsidy is as transparent as possible. The tariff baskets should also allow customers to understand more clearly the implications of this draft determination on their bills.

Calculating the retail charge cap

The charge cap is the weighted average increase in tariffs within a basket. It is therefore the maximum amount by which tariffs on average can increase within a tariff basket.

In this draft determination we have set retail charges relative to the retail price index. This is the same index that Ofwat uses to set charge limits for the water and sewerage companies in England and Wales. Scottish Water therefore has the same protection against financing inflation risk as the companies south of the border.

The retail charge cap regime applied in Scotland will mirror that which is used in England and Wales. Scottish Water would be permitted to carry over any unused change in charges from one year to following years. Unused charge cap is denoted with the letter 'u'. The real charge cap is denoted by the letter 'K'.

The maximum charge cap is determined as follows:

Charge Cap ≤ RPI + K + u

In this draft determination we have used the following ten tariff baskets:

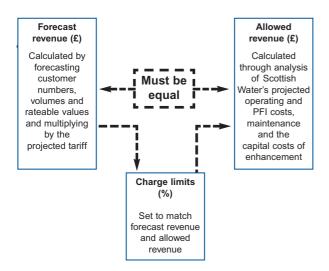
- household unmeasured water;
- household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water with 25mm connection or greater;
- measured waste water with 25mm connection or greater;
- surface water drainage (excluding unmeasured household);
- trade effluent;
- standard metered water connection 20mm; and
- standard metered waste water connection 20mm.

We have set a charge cap in the form RPI+K for each basket.

Retail charge caps

Figure 3 illustrates the charge setting process. We firstly calculate charge limits for both Scottish Water's core functions and its retail subsidiary combined. We then calculate separate charge limits for Scottish Water's core (wholesale) function.

Figure 3: How charge limits are set³⁰



The charge limits for non-household customers will limit the increases in charges that the new retail subsidiary of Scottish Water can levy on its customers. We expect the new Commission to make it a licence condition of the new retail subsidiary that it agrees to be bound by these charge caps. The non-household charge caps will also apply to Scottish Water in its role as the 'supplier of last resort'.

We have also set limits on the increases in charges that Scottish Water can charge its own and future retailers of water and waste water services to non-household customers.

The K factor for each tariff basket, against which we will monitor Scottish Water, is shown in Table 22.

Table 22: The K factor for each tariff basket

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	-0.5%	-0.5%	-2.5%	-2.5%
Household unmeasured wastewater	-0.5%	-0.5%	-2.5%	-2.5%
Non-household unmeasured water	-2.5%	-2.5%	-4.6%	-2.5%
Non-household unmeasured wastewater	-2.5%	-2.5%	-4.6%	-2.5%
Measured water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Measured wastewater (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Surface water drainage (excluding unmeasured domestic)	-2.5%	-2.5%	-4.6%	-2.5%
Trade effluent	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered wastewater connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Overall weighted average price increase	-1.2%	-1.2%	-3.2%	-2.5%

Charge limits for Scottish Water's core wholesale business

There is no precedent within the water and sewerage industry in the UK for the setting of wholesale charges. We believe therefore that it is important that Scottish Water has the opportunity to decide how it wants to set its wholesale tariffs³¹. We will therefore ask Scottish Water to identify wholesale tariffs as part of the scheme of charges process for 2006-07. These non-household wholesale charges should be consistent with the implied wholesale revenue cap for 2005-06.

We consider that as the market develops, Scottish Water wholesale may wish to rebalance tariffs to better reflect the underlying costs. We have therefore set one K factor for the entire non-household wholesale business.

The revenue cap, expected growth in the non-household customer base and the corresponding K factor are set out in Tables 23 and 24.

Table 23: Forecast non-household wholesale revenue resulting from changes in the customer base (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Forecast non-household wholesale revenue	£322.7m	£326.7m	£330.1m	£333.9m	£336.3m
Percentage change		1.3%	1.0%	1.2%	0.7%

³⁰ The charge limits will influence the individual tariff within each basket.

³¹ Scottish Water did not provide any detailed information on its plans for wholesale tariffs in its second draft business plan.

Table 24: Non-household wholesale charge limits (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Previous year revenue	£290.3m	£294.0m	£294.6m	£290.6m
Percentage change due to customer base changes	1.3%	1.0%	1.2%	0.7%
Revenue base for year	£294.0m	£297.0m	£298.0m	£292.8m
Allowed revenue	£294.0m	£294.6m	£290.6m	£293.2m
(Allowed revenue / Revenue base) minus 1	0.0%	-0.8%	-2.5%	0.1%
The K factor (subtract RPI)	-2.5%	-3.3%	-5.0%	-2.4%

The impact of charge limits on customers' bills

In the 2006-10 regulatory control period, all household customers (except second home owners) will see a reduction in their tariffs in real terms. No group of non-household customers that is currently paying tariffs within Scottish Water's scheme of charges will face a real increase in the tariffs they pay.

We use a number of standard customers to monitor the impact of our charge caps on individual types of customers.

Table 25 summarises the impact of our charge caps on each of our standard customers.

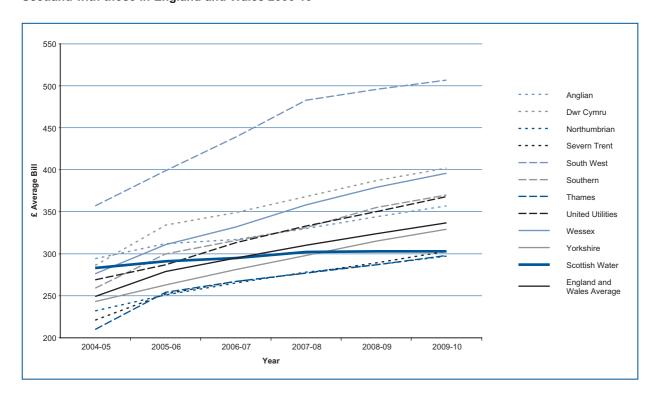
Table 25: Effects on all standard customers' bills 2005-06 to 2009-10

Customer name	Customer type	Total bill 2005-06	Nominal bill 2009-10	% change in bill
Band D unmeasured household	Unmeasured household	£347.76	£361.81	4.04%
Large house	Measured household	£652.85	£639.14	-2.10%
Small newsagent/grocer	Unmeasured household	£304.07	£297.68	-2.10%
Local hairdresser	Unmeasured household	£379.53	£371.56	-2.10%
Sports club	Unmeasured household	£518.91	£508.01	-2.10%
Supermarket	Unmeasured household	£3,427.11	£3,355.14	-2.10%
Warehouse	Measured household	£306.38	£299.95	-2.10%
High school	Measured household	£4989.30	£4,884.52	-2.10%
Hotel	Measured household	£34,326.75	£33,605.89	-2.10%
Convenience store	Measured household	£545.53	£534.08	-2.10%
Garage	Measured household	£854.85	£836.90	-2.10%
Large restaurant	Measured household	£4,876.79	£4,774.38	-2.10%
Large office	Measured household	£29,876.62	£29,249.21	-2.10%
Retail group	Measured household	£87,850.30	£86,005.45	-2.10%
Food manufacturer 1	Measured household	£108,427.50	£106,150.52	-2.10%
Food manufacturer 2	Measured household	£223,671.00	£218,973.91	-2.10%
Large manufacturer	Measured household	£421,631.75	£412,777.48	-2.10%
Brewers	Measured household	£579,068.00	£566,907.57	-2.10%
Bakery	Trade effluent	£294.24	£288.06	-2.10%
Clothing manufacturer	Trade effluent	£5,560.53	£5,443.76	-2.10%
Abattoir	Trade effluent	£118,796.65	£116,301.92	-2.10%
Electronics business	Trade effluent	£211,029.12	£206,597.51	-2.10%
Printers	Trade effluent	£15,240.28	£14,920.24	-2.10%
Distillery	Trade effluent	£67,163.59	£65,753.16	-2.10%

We can compare the projected average household charge for 2006-10 for each of the water and sewerage companies in England and Wales with Scottish Water's expected average household bill. This comparison is shown in Figure 4³². It shows that by 2009-10 the average household bills in Scotland will be amongst the lowest in England and Wales.

³² Scottish Water benefits from the lower cost of capital. Customers would likely pay a little more if the level of service provided in Scotland was the same (in all respects) as in England and Wales.

Figure 4: Comparison of household bills in Scotland with those in England and Wales 2006-10



Outlook for 2010 to 2014

We have set indicative charge caps for the period 2010-14. These charge caps are broadly in line with retail price inflation.

The indicative charge caps are set out in Table 26.

Table 26: Indicative charge caps for 2010-14

Year	2010-11	2011-12	2012-13	2013-14
K Factor ³³	0.0%	0.0%	0.0%	0.1%

These charge caps assume the following:

- Scottish Water achieves, but does not beat, its targets for the 2006-10 regulatory control period;
- an investment programme during the 2010-14 regulatory control period of £1,800 million in real prices;
- capital inflation of 3%;

- · there is no change in the key financial ratios;
- public expenditure of £182 million a year is available.

The actual charge caps for 2010-14 will depend on Scottish Water's performance in the 2006-10 regulatory control period and on decisions of the Scottish Ministers with regard to their investment objectives and the level of public expenditure that they are prepared to make available.

Summary

This draft determination offers the prospect of falling charges in real terms for almost all customers. Most household customers will see their charges fall by over 4% in real terms. Average household bills in Scotland will on average be amongst the lowest in the UK. In reducing charges in real terms, we have not compromised the prospects for future charges.

It is also important to note that this draft determination funds an investment programme of £2,100 million in

³³ Adjustment in tariff basket income relative to the rate of retail price inflation.

2003-04 prices. This is the largest investment programme in Great Britain on a per connected property basis and the second largest programme in absolute terms. Only Thames Water, which has approximately twice as many customers as Scottish Water, has a larger investment programme.

Customers in Scotland pay lower bills than would otherwise be necessary because Scottish Water has access to a lower public sector cost of capital. Bills could be more than 10% higher if this public sector debt were not available. Customers are also beginning to benefit from the improvement in efficiency that Scottish Water has achieved in its first three years. Over the next few years, if Scottish Water continues to improve its efficiency, average household bills will continue to be among the lowest in the UK.

Section 1: Introduction Chapter 1: Introduction

Section 1: Introduction Chapter 1: Introduction

Introduction

For most customers, the most important output of a Strategic Review of Charges is the level and profile of prices they will have to pay for their water and waste water services. Our role is to set charges that will allow Scottish Water to meet the objectives that Scottish Ministers have set for the industry in Scotland during the 2006-10 regulatory control period. We have set charges that are as high as they need to be, but no higher than they need to be. It is now for the management of Scottish Water to determine how best to use the resources available to deliver both the Ministers' 'essential' and 'desirable' objectives.

This volume sets out our views on the revenue required by Scottish Water for the 2006-10 regulatory control period. It also sets out the impact of this level of revenue on customers' charges. We explain in detail how we have set both the required level of revenue and the corresponding charge caps. We also describe the modelling assumptions we have used.

We have set the caps at a level which ensures that Scottish Water's revenue is sufficient to meet the expenditure required for the effective exercise of its core functions. At the same time, the caps are set such that if Scottish Water were to perform in line with the assumptions in this draft determination then it would comply with all of the cash-based financial ratios that Ofwat used, during its 2004 final determination³⁴, to assess the financial strength of the companies it regulates. This should ensure that the interests of both current and future customers have been taken into account.

In this volume we also explain the impact of the separation of retail activities for non-household customers. We describe how we have set appropriate charge caps for both the wholesale and retail activities.

Finally, we consider the impact of the proposed charge caps on customers. We use analysis of standardised customers' bills to predict the impact on typical customers.

This volume is presented in four sections.

Section 1 contains this introductory chapter.

Section 2 contains seven chapters. In this section we describe how we have established the required level of revenue.

- Chapter 2 explains our financial modelling for this draft determination and the assumptions we have used.
- Chapter 3 describes the approach we have taken to setting a charge cap and how this differs from the approach taken in the previous Review.
- Chapter 4 describes how we calculated the charge cap using the financial model. It explains how we have ensured that Scottish Water should comply with Ofwat's financial ratios in 2009-10.
- Chapter 5 compares the revenue level allowed to Scottish Water with that allowed for the water and waste water companies in England and Wales.
- Chapter 6 explains the interim determination and logging up/down process. This is the mechanism by which we can adjust charges if something happens that is outside the control of Scottish Water's management. Interim determinations can either increase or decrease charges to customers.
- Chapter 7 outlines our initial thoughts on how we should manage out-performance of the determination of charges by Scottish Water.
- Chapter 8 describes the risk analysis that we have undertaken to test how robust are our conclusions on revenue and charges.

Section 3 comprises one chapter concerning the split of Scottish Water's activities into wholesale and retail.

 Chapter 9 determines the level of wholesale revenue based on the revenue cap.

³⁴ The 'funds from operations divided by total net outstanding debt ratio' effectively determines the initial RCV.

Section 1: Introduction Chapter 1: Introduction

Section 4 contains four chapters that focus on charge setting and its impact on customers.

- Chapter 10 explains our use of tariff baskets.
- Chapter 11 outlines the wholesale and retail charge caps that will apply for the 2006-10 regulatory control period.
- Chapter 12 describes the 'standard customers' that we use to monitor the impact of charge caps on customers' bills and to compare the level of charges in Scotland with those in England and Wales.
- Chapter 13 describes the prospects for future charges.

Section 2: Setting the required level of revenue Chapter 2: Financial modelling

Introduction

In this chapter we describe how we used our financial model to calculate the revenue that Scottish Water needs to raise from customers. The chapter also details our assumptions and the ratios that we used to determine whether the proposed charge caps are consistent with the longer term financial sustainability of Scottish Water.

Background

We have the general statutory function of promoting the interests of customers and prospective customers of Scottish Water's core business. One of the ways in which we do this is by ensuring that Scottish Water has sufficient funding to carry out its core functions as a water and sewerage service undertaker in an efficient manner.

Scottish Water's funding comes from two sources:

- revenue raised through charges to customers; and
- borrowing (usually from government).

The revenue that is raised from customers is determined by the charge limits that we set for Scottish Water. We use a financial model to inform our calculation of the charge limits. The model therefore plays a key role in the Strategic Review of Charges 2006-10, having an impact on:

- customers because it is used in determining the limits on charges for water and sewerage services; and
- Scottish Water because it is used in determining the level of funding available for the business to carry out its core functions.

We have set charge caps for each of the four years covered by the Strategic Review of Charges 2006-10. Charge limits are forward looking and therefore in setting these limits we have had to make a number of assumptions. These assumptions concern both macroeconomic factors and factors that are specific to Scottish Water.

One of the key considerations of our modelling was the financial sustainability of Scottish Water. We used a set of ratios to assess financial sustainability. These ratios are the same as those used by Ofwat to assess the financial sustainability of the water industry south of the border. Scottish Water's revenue in 2009-10 has been set such that it will comply with all of the cash-based financial ratios if it performs in line with this draft determination.

The financial model

The model calculates the required charge limits having taken account of the costs that Scottish Water is likely to incur. Constructed in Microsoft Excel®, the model consists of a series of linked spreadsheets. The model projects forward to March 2025. Our analysis has, however, focused on the period to 2014.

At the end of September 2004 we published the model and a user manual on our website. The user manual contained more detailed information about the model. This model has subsequently been updated to model the potential corporation tax liability of Scottish Water. This revised model is available on our website.

Development of the model

We developed the model using internal resources. The model takes account of the proposals outlined in our methodology consultation and has been subject to rigorous internal analysis. This has ensured that all of the formulae perform as we would expect and that the results are consistent with our expectations when inputting test information.

We asked Ernst & Young LLP to review both the initial and final versions of the financial model. Their comments on the financial model are included in Appendix 12.

In June 2004 we provided a draft version of the model to Scottish Water. We also gave Scottish Water an opportunity to comment on the model at a workshop in July 2004. An updated version of the model was provided to Scottish Water in February 2005 to assist them in completing their second draft business plan.

We believe that our own internal challenge and the detailed scrutiny provided by Ernst & Young LLP's review should reassure stakeholders that the output of the financial model is reliable.

Best practice guidelines

The Institute of Chartered Accountants for England and Wales publishes a useful guide on building financial models, 'Spreadsheet modelling best practice'35. It provides guidelines on scoping, specifying, designing, building, testing and using spreadsheet models. It recommends that spreadsheet models should separate the following processes:

- inputs,
- · calculations, and
- results.

It also recommends that there should be a title sheet explaining the model; that, where possible, the spreadsheet should read from left to right and top to bottom; that more, rather than fewer more complex, worksheets are used; and that each row contains only one formula.

Structure of the model

The structure of our model follows the best practice guidelines. The spreadsheets within the model can be divided into six categories:

- Key this explains the use of colours within the model.
- Input these are the sheets into which we have input information.
- Process these sheets use input information in calculations that feed into the output sheets.
- Accounting outputs these spreadsheets show the projected financial statements for Scottish Water.
 They allow us to understand the minimum amount of

revenue that Scottish Water requires.

- Main outputs these worksheets contain financial ratios analysis. These sheets are critical to an understanding of whether the level of revenue is consistent with the financial sustainability of Scottish Water.
- Variation sheet this allows the user to understand whether the level of revenue is at the minimum level consistent with financial sustainability for Scottish Water.

Information in the model

We provided Scottish Water with the input tables for the financial model as part of the business plan guidance, which we issued in December 2004.

The model also contains financial assumptions. These assumptions include our calculation of real interest rates and our expectation of inflation. All of this input information influenced the final answer that was calculated by the model. We have produced a full audit trail for each input into the model.

Financial assumptions³⁶

In building our model, we needed to make a number of financial assumptions. These are briefly described

Inflation

Inflation measures increases in the prices of goods and services. Our assumptions on inflation are important because the model calculates revenues over a number of years. We use indices to calculate inflation. In this draft determination we have used two indices to take account of cost inflation, namely:

- the Consumer Price Index (CPI) for all non-asset costs; and
- the Construction Output Price Index (COPI), to assess the impact of increases in prices on investments.

³⁵ Nick and Johnathan Batson, 'Spreadsheet modelling best practice', April 1999, available at http://www.eusprig.org/#DOWNLOADS.

³⁶ At the time of writing, the Scottish Water Annual Report for 2004-05 is not available. 2004-05 figures are our estimate.

We have, however, linked prices to retail price inflation. This should reduce any financing risks faced by Scottish Water.

CPI

We believe that the CPI is an appropriate measure of inflation for non-capital goods costs. The CPI is now the measure of inflation that is used as a target measure by the Government and the Bank of England. We have assumed that CPI will be 2% for each year of the regulatory control period. This is in line with the Bank of England's target.

COPI

We have used COPI to analyse the effect of inflation on capital expenditure. COPI measures the movement in prices of construction projects. We have used the 'all new construction output index' in this draft determination.

The Department of Trade and Industry publishes COPI on a quarterly basis.

Cash

We have assumed that Scottish Water maintains a cash balance of £2 million throughout the regulatory control period.

Working capital and other balance sheet assumptions

Working capital comprises current assets and current liabilities. Current assets include cash, debtors, stocks and prepayments. Current liabilities include items such as trade and capital creditors, and short-term debt.

We forecast changes in working capital in the financial model. Our assumptions are outlined in Table 2.1. Our calculation of tax uses the previous year's revenue in the 'prepayments and accrued income' and 'other debtors' ratios. This has only a small effect on the level of revenue required.

Table 2.1: Balance sheet assumptions

Title	Assumption	Value for 2006-10
Trade debtors	Number of days	27
Stocks	Percentage of operating expenditure, excluding PPP	1.5%
Prepayments and accrued income	Percentage of previous year's revenue	5.5%
Other debtors	Percentage of previous year's revenue	2.5%
Trade and capital creditors	Percentage of capital expenditure	25.60%
Accruals and deferred income	Percentage of operating expenditure, including PPP	28.0%
Other creditors	Percentage of operating expenditure, including PPP	8.0%
Cash	Balance held by Scottish Water	£2 million

Exceptional/extraordinary costs

We have assumed that there are no exceptional items.

Financial sustainability

This section outlines the financial ratios we have used in this draft determination. Our financial model automatically calculates these ratios.

As explained earlier, we have set Scottish Water's revenue in 2009-10 such that it will comply with each of the cash-based ratios if it were to meet the terms of this draft determination.

Ofwat's use of financial ratios

Ofwat has a duty to ensure that an efficient company can finance its functions. It uses ratios to assess the financial sustainability of water and sewerage companies. It also consults the capital markets on the appropriate financial ratios for the regulatory control period. We have compared Scottish Water's financial ratios with those used in Ofwat's last two price determinations:

- 1999 price review covering the period 2000-05; and
- 2004 price review covering the period 2005-10.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, 'Final determinations: Future water and sewerage charges 2000-05'. These ratios are shown in Table 2.2.

Table 2.2: Ofwat's target ratios for 2000-05

	Water and sewerage companies	Large water only companies	Small water only companies		
Historic cost interest cover	Min 2%	Min 2.25%	Min 2.5%		
Average gearing (DD+E)	45-55%	45-55%	45-55%		
Cash interest cover (EBITDA Basis)	Min 3%	Min 3.4%	Min 3.75%		
Cash interest cover (EBIDA Basis)	Min 2%	Min 2.25%	Min 2.5%		
Debt payback period (EBITDA Basis)	Max 5 yrs	Max 5 yrs	Max 5 yrs		
Debt payback period (EBIDA Basis)	Max 7 yrs	Max 7 yrs	Max 7 yrs		
Cashflow to capital expenditure ratio (EBIDA Basis)	Min 40%	Min 40%	Min 40%		

In 'Future water and sewerage charges 2005-10: Final determinations', Ofwat outlined the financial indicators that it had used to set prices for the next regulatory period. Table 2.3 shows these ratios.

Table 2.3: Ofwat's target ratios for 2005-10

	Target
Cash interest cover (funds from operations/gross interest)	Around 3 times
Adjusted cash interest cover (funds from operations less capital charges/gross interest)	Around 1.6 times
Adjusted cash interest cover (funds from operations less capital maintenance expenditure/gross interest)	Around 2 times
Funds from operations/debt	Greater than 13%
Retained cashflow/debt	Greater than 7%
Gearing (net debt/regulatory capital value)	Below 65%

Ofwat outlined its reasons for changing the financial ratios in its MD 190 letter³⁷. It explained that it was seeking to reflect the emphasis that the rating agencies now place on cash-based ratios.

Our approach in the Strategic Review 2006-10

We have adopted both the ratios and target values used by Ofwat in its price determinations for 2005-10. Where Ofwat states that a target is 'around' a certain level, we have assumed that the ratio for Scottish Water should be within 25% of the target. Compliance with the financial ratios is a constraint on prices in 2009-10. We are not concerned if performance is too good against an individual ratio unless Scottish Water complies with all the cash-based ratios in 2009-10.

We have also published the two debt payback period ratios and the cash flow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. We believe that it is desirable for Scottish Water to be broadly compliant with the target value for those ratios.

The following paragraphs explain how each of these ratios have been calculated³⁸ and their significance. The financial model manual explains in detail how each of the inputs for these ratios is calculated.

Cash interest cover (2004 price review)

This ratio calculates the number of times net cash flow from operations after paying any taxes can cover the interest expenses of the same year. A value of one would mean that the company generated just enough cash to cover its interest expenses. This ratio does not take account of any investment in capital.

Net cash flow from operations – tax

Interest paid

Ofwat has targeted a value of around 3 for this ratio.

Adjusted cash interest cover (2004 price review)

This ratio calculates the number of times that interest can be paid out of net cash flow from operations less investment in maintaining assets. Ofwat differentiates between 'maintenance charges' and 'maintenance expenditure' and calculates two separate ratios.

Ofwat believes that the companies should achieve a ratio of around 1.6 times for the maintenance expenditure ratio and around 2 times for the maintenance charge ratio. We have used 1.6 times as the appropriate target for Scottish Water.

The adjusted cash interest cover ratio is calculated as follows:

Net cash flow – depreciation – infrastructure renewals expenditure – tax

Interest paid

³⁷ MD 190, 'Further guidance to companies for final business plans', March 2004.

³⁸ Unlike Ofwat, we do not include interest received as income, as the projected amounts are not expected to be material.

Funds from operations to debt (2004 price review)

This ratio measures the percentage of outstanding debt that can be covered by funds generated from operations. Ofwat expects this ratio to be greater than 13%.

The ratio of funds from operations to debt is calculated as follows:

Net cash flow from operations – tax – interest paid

Net debt

This ratio is the most challenging to Scottish Water as it is funded entirely by debt and customer retained earnings. We discuss in Chapter 4 the consequences of setting lower prices in this regulatory control period and not complying with this ratio.

Retained cash flow to debt (2004 price review)

This ratio measures the ability of a company to pay its debt back from cash retained within the business. The output is a percentage; Ofwat expects the companies to achieve a ratio of no less than 7%.

The ratio is calculated as follows:

Net cash flow from operations – tax – dividends

Net debt

Gearing (2004 price review)

This is a measure of Scottish Water's level of indebtedness. It is the total debt divided by the RCV. Ofwat expects companies to maintain a ratio of below 65%. We will use this ratio as a general guide to the overall financial strength of Scottish Water.

The ratio is calculated as follows:

Net debt
RCV

Debt payback period (EBITDA basis) (1999 price review)

This is a measure of how many years it would take a company to pay back its debt from earnings before interest, tax, depreciation and amortisation:

Net cash flow from operating activities

Debt payback period (EBDA basis) (1999 price review)

This is a measure of how many years it would take a company to pay back its debt from earnings before depreciation and amortisation but after interest and tax:

Net debt

Net cash flow from operating activities less interest less tax

Cash flow to capital expenditure (1999 price review)

The cash flow to capital expenditure ratio measures how much of the capital programme is being paid out of current cash flows:

Net operating cash flow from operating activities less tax less interest

IRE plus other asset additions less asset disposals

Summary

We have used a financial model to set the charge limits in this draft determination. It calculates the revenue required by Scottish Water to carry out its core functions.

We have made a number of assumptions about inflation and working capital in order to set the required level of revenue for Scottish Water.

One of the key considerations of our modelling was the financial sustainability of Scottish Water. We have set prices in 2009-10 such that Scottish Water's financial position complies with the cash-based target ratios if it were to perform in line with this draft determination. The targeted ratios are those used by Ofwat in its price

determinations for 2005-10. We have also published the two debt payback period ratios and the cashflow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory control period.

Our financial model provides a reliable, transparent and auditable basis for price setting. We believe that the assumptions we have made are both prudent and appropriate. The revenue caps we have calculated are consistent with our duty to set prices at a level that is consistent with Scottish Water delivering the objectives of Ministers at the lowest reasonable cost.

Section 2: Setting the required level of revenue Chapter 3: Approach to setting a revenue cap

Introduction

This draft determination sets the revenue that Scottish Water should require to provide an appropriate water and sewerage service to customers and meet the objectives outlined in the Ministerial Guidance. Most customers are concerned primarily about the level and profile of prices they will have to pay. The role of a regulator, in broad terms, is to set prices that are only as high as they need to be to ensure that the objectives of Scottish Ministers can be met at the lowest reasonable overall cost.

We have moved towards the regulatory capital value method of price setting in this draft determination. We have set charges in 2009-10 such that Scottish Water will comply with all of the financial ratios monitored by Ofwat³⁹ if it were to perform at the level assumed by this draft determination. This should ensure that the calculation of revenue is more transparent than in the Strategic Review of Charges 2002-06.

This chapter provides a brief summary of how we have calculated the revenue cap and ensured that we will be in a position to use the regulatory capital value method of price setting at the next determination of charges.

The calculation of revenue

The financial model calculates revenue as follows:

Return allowed on the regulatory capital value

allowed for operating costs

depreciation on non-infrastructure assets

the infrastructure renewals charge (IRC)

the costs of PPP contracts

change in working capital

taxation

Our approach to setting price limits involved the following stages:

- We identified the investment that Scottish Water had to deliver in the 2006-10 regulatory control period.
- In line with Ministerial Guidance, we opted to smooth the change in revenue required to reach the target of

financial sustainability over the four years of the regulatory control period.

- We calculated the depreciation and infrastructure renewals charges that were consistent with this investment programme and with Scottish Water's estimated net Modern Equivalent Asset Value in 2005-06.
- We identified the total allowed for level of operating expenditure in each year.
- We identified the allowed for costs of Public Private Partnerships.
- We estimated asset disposals and the cash proceeds from disposals.
- We determined the downwards adjustment to the initial RCV that was appropriate given the delay in delivery of the Quality and Standards II programme.
- We determined an appropriate rate of return (including the expected marginal real interest rate) and the allowance for embedded debt.

As discussed in the previous chapter, the financial model also contained a number of assumptions with regard to working capital, inflation rates and the calculation of tax.

We used the financial model to identify the cash return on the RCV required by Scottish Water in 2009-10. As the rate of return and embedded debt allowance were fixed, this meant that in effect we were determining the regulatory capital value that we required in 2009-10 in order to ensure that Scottish Water would comply with the targeted financial ratios if it were to perform at the level assumed by this draft determination.

This was an iterative process because different RCVs in 2009-10 resulted in different RCVs in earlier years. These different RCVs affected the revenue required in each year. The level of revenue in turn affects the surplus generated, borrowing required and the tax charge payable and the cash flow generated in 2009-10.

³⁹ Except debt to RCV, which, for a wholly debt funded company, is much less relevant than the cash-based (debt affordability) ratios. However, our final answer in the financial model did comply with the ratio.

The financial model helped us to resolve this circular calculation.

The calculation provided us with a value for the initial RCV. We checked this calculated value for the initial RCV with our analysis of comparators and found it to be reasonable.

Monitoring financial performance

Our approach simplifies the monitoring of financial performance. Scottish Water's financial performance will be in line with the assumptions in the determination of charges if it complies with each of the targeted financial ratios in 2009-10. We can monitor progress by reviewing Scottish Water's financial indicators during the regulatory control period with those predicted by the financial model.

It will, of course, be critical to monitor delivery of the capital programme and the level of service provided to customers closely. Scottish Water should not seek to ensure compliance with its financial targets by cutting corners on customer service or by delaying the delivery of the investment objectives set out by the Ministerial Guidance.

Conclusion

We have moved towards the RCV method of price setting in this draft determination. This should improve the transparency of our calculation of the required level of revenue. It will also allow more robust comparisons to be drawn of the financial strength of the industry in Scotland relative to that of the companies south of the border.

Our approach ensures that if Scottish Water were to perform at the level assumed in this draft determination then it will comply with all of the cash-based ratios used by Ofwat to monitor the industry in England and Wales. This will facilitate monitoring as it will be clear (through a comparison of the targeted financial ratios) whether or not Scottish Water has met the financial terms of the determination of charges. Clearly, Scottish Water must not cut corners on either the investment delivery or level

of service to customers in order to meet its financial targets. Our annual reports will comment on Scottish Water's progress in these areas.

Section 2: Setting the required level of revenue Chapter 4: Calculation of the revenue cap

Introduction

In the previous chapter, we described how we set the revenue cap. This chapter now sets out our calculations. It reviews the information that we entered into the financial model and the calculation of the minimum level of revenue that Scottish Water would require in 2009-10 in order to be financially sustainable. As explained previously, we have adopted the same ratios as Ofwat in our assessment of financial sustainability. These were set out in detail in Chapter 2.

The chapter sets out the levels of investment, operating cost, depreciation and PPP costs that we have allowed for. We also explain the approach that we have taken to the calculation of tax. This information allows us to calculate the required regulatory capital value in 2009-10 and, consequently, the initial RCV.

In line with the Ministerial Guidance on the principles of charging, we have phased the increase in revenue required.

The investment programme

In Chapter 15 of Volume 5, we set out the investment programme that Scottish Water will have to deliver during this regulatory control period if it is to meet all of the objectives set by Ministers. The programme is set out in Table 4.1.

Table 4.1: Required investment programme (outturn prices)

Investment category	2006-07	2007-08	2008-09	2009-10
Overhang from Quality and Standards II	£243.7m	£30.9m	-	-
Infrastructure renewals expenditure	£88.6m	£91.2m	£94.0m	£96.8m
Other investment (including additional retail investment)	£202.1m	£470.9m	£539.4m	£592.7m
Total investment	£534.3m	£593.0m	£633.3m	£689.5m

Depreciation and infrastructure renewals charges

In Chapters 13 and 16 of Volume 5, we explained how we calculate the infrastructure renewals and depreciation charges. The depreciation charge can be divided into the depreciation of existing assets (represented by Scottish Water's net Modern Equivalent Asset Value) and depreciation of new assets. The infrastructure renewals charge has been set equal to actual spending on infrastructure renewals in Table 4.1. The depreciation and infrastructure renewals charges are shown in Table 4.2.

Table 4.2: Depreciation and infrastructure renewals charges (current cost basis, outturn prices)

Depreciation category	2006-07	2007-08	2008-09	2009-10
Current cost depreciation of existing assets	£178.8m	£184.2m	£182.3m	£180.1m
Current cost depreciation of new assets (after 1st April 2006)	£8.3m	£27.0m	£48.4m	£72.2m
Infrastructure renewals charge	£88.6m	£91.2m	£94.0m	£96.8m
Total depreciation and infrastructure charges	£275.7m	£302.4m	£324.7m	£349.1m

Total allowed for operating costs

In Chapter 15 of Volume 6, we summarised the maximum level of operating costs that Scottish Water should incur in meeting the Ministers' objectives and providing an improving level of service to customers. Total operating costs include the following:

- base operating costs, including any adjustments;
- our estimate of the scope for efficiency;
- our estimate of Consumer Price Inflation; and
- new operating costs.

Total allowed for operating costs are set out in Table 4.3.

Table 4.3: Total allowed for operating costs (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total water operating costs	£150.5m	£153.8m	£157.5m	£163.6m
Total waste water operating costs	£117.5m	£121.1m	£124.3m	£128.5m
Additional retail costs	£4.1m	£2.6m	£2.1m	£1.6m
Total allowed for operating costs	£272.1m	£277.6m	£283.9m	£293.8m

Allowed costs of Public Private Partnerships

We explained our approach to PPP in Volume 5. Some additional investment has become necessary at the sites that are managed by the PPP contractors. This investment will have to be delivered by these contractors and is likely to require contract amendments. In Table 4.4, we have shown the original costs expected to be incurred in relation to the contracts signed by the three former water authorities. The table also shows the new additional costs incurred as a result of extra investment that is now required and which does not appear to have been foreseen when the original contracts were signed.

Table 4.4: Total allowed for costs for PPPs (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Original contract costs	£121.4m	£123.8m	£126.3m	£128.8m
Additional costs resulting from additional investment	£1.0m	£1.0m	£3.2m	£7.0m
Total allowed for PPP costs	£122.4m	£124.8m	£129.5m	£135.8m

Asset disposals and cash proceeds

Asset disposals are not expected to be very material. Our estimates have taken account of the level of asset sales made by Scottish Water. We have also taken account of experience from south of the border.

Our assumptions are outlined in Table 4.5.

Table 4.5: Asset Disposals and cash proceeds (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Asset disposals (Net Book Value)	£1.0m	£1.0m	£1.0m	£1.0m
Cash proceeds from asset disposals	£1.0m	£1.0m	£1.0m	£1.0m

Other inputs to the financial model

We set an allowed rate of return of 0.72% real post-tax. We also allowed the extra costs incurred by Scottish Water for all its embedded debt that had a coupon greater than 4.6% nominal. The interest rate on new or refinanced debt was set in line with the rate of return on debt included in our cost of capital calculation. We have used a debt to RCV ratio of 65% in our application of our hybrid WACC. This is discussed in more detail in Chapter 18 of Volume 5.

The model also uses two separate inflation rates. We use the Consumer Price Index to inflate the costs of all operating and PPP costs. The Construction Output Price Index is used to inflate capital expenditure. Charges have been set relative to RPI in order to remove the financing risk from Scottish Water.

The model also takes account of the unsubstantiated claim for efficiency made by the former East of Scotland Water Authority. In line with our agreement with the Board of Scottish Water, we have subtracted £16.04 million a year in outturn prices from the allowed level of capital expenditure.

Our approach to the calculation of tax

We have taken a conservative approach (i.e. assumed the highest level of corporation tax that Scottish Water is likely to pay) in the calculation of tax. Our approach is based on the advice that we received from Ernst & Young LLP and our understanding of the potential introduction of international accounting standards.

The main difference relates to the treatment of infrastructure renewals expenditure. Scottish Water currently claims its infrastructure renewals charge as an expense for tax purposes. Our understanding is that soon

this practice may not satisfy Her Majesty's Revenue and Customs. In future, expenditure on infrastructure renewals will have to be capitalised and depreciated over the life of the assets. This increases the taxable surplus generated by Scottish Water and will lead to an increase in the initial tax payable. Over the life of these assets there is no increase in the tax that will be payable, but there is a difference in when the tax becomes payable.

If we have overestimated the tax that is payable, we believe that Scottish Water ought to return this cash to customers through the rebate scheme that we describe in Chapter 7. Depending on the materiality of the difference an interim determination could otherwise become appropriate.

The calculation of revenue

We used the financial model to identify the cash return on the RCV required by Scottish Water in 2009-10. The rate of return and the embedded debt allowance were both fixed so we were able to determine the regulatory capital value that we required in 2009-10. The constraint was that Scottish Water should comply in 2009-10 with all of the targeted cash-based financial ratios. In practice, of course, Scottish Water will only comply with all of these financial ratios if it were to perform at the level assumed in this draft determination.

The financial model calculated the value of the initial and 2009-10 RCV.

Table 4.6 sets out the RCV in each year of this regulatory control period.

Table 4.6: Calculation of RCV in each year of this regulatory control period (outturn prices)

		2006-07	2007-08	2008-09	2009-10
	Opening RCV	£3,519.8m	£3,847.8m	£4,214.3m	£4,606.1m
Plus	Inflation adjustment	£70.4m	£77.0m	£84.3m	£92.1m
Plus	New investment	£534.3m £187.2m rge £88.6m	34.3m £593.0m £633.3m		£689.5m
Less	Depreciation		187.2m £211.2m	£230.7m	£252.3m
Less	Infrastructure renewals charge		£91.2m	£94.0m	£96.8m
Less	Disposal of assets	£1.0m	£1.1m	£1.1m	£1.1m
Equals	Closing RCV	£3,847.8m	£4,214.3m	£4,606.1m	£5,037.5m
	Year average	£3,683.8m	£4,031.0m	£4,410.2m	£4,821.8m

The tax payable is shown in Table 4.7.

Table 4.7: Corporation tax payable 2006-10 (outturn prices)

Corporation tax payable	2006-07	2007-08	2008-09	2009-10
Corporation tax payable	£0.0m	£15.5m	£26.8m	£14.8m

The revenue we allow Scottish Water in each year is set out in Table 4.8. This table also shows the annual increase in revenue in both nominal and real terms. We estimate real increases using an assumed 2.5% increase in the retail price index (RPI).

Table 4.8: Revenue caps 2006-10 (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Operating costs	n/a	£272.1m	£277.6m	£283.9m	£293.8m
PPP charge	n/a	£122.4m	£124.8m	£129.5m	£135.8m
Current cost depreciation ⁴⁰	n/a	£187.2m	£211.2m	£230.7m	£252.3m
Infrastructure renewals charge	n/a	£88.6m	£91.2m	£94.0m	£96.8m
Cash return on the RCV ⁴¹	n/a	£148.9m	£163.6m	£178.9m	£195.7m
Embedded debt allowance	n/a	£33.8m	£32.3m	£30.7m	£29.1m
Tax	n/a	£0.0m	£15.5m	£26.8m	£14.8m
Calculated revenue	n/a	£852.9m	£916.2m	£974.5m	£1,018.2m
Financeability adjustment	n/a	£129.7m	£89.3m	£34.7m	£0.0m
Total revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Year on year increase (nominal)	-	1.82%	2.33%	0.36%	0.90%
Year on year increase (real)	-	-0.68%	-0.17%	-2.14%	-1.60%

Financial performance

In Table 4.9 we set out the value of each targeted ratio for each year of this regulatory control period.

Table 4.9: Financial performance 2006-10

Financial ratio	Targeted value	2006-07	2007-08	2008-09	2009-10
Cash interest cover	Around 3 times	3.7	3.9	3.6	3.5
Adjusted cash interest cover	Around 1.6 times	2.5	2.6	2.2	2.0
Funds from operations: debt	Greater than 13%	15.9%	16.3%	14.1%	13.0%
Retained cashflow: debt	Greater than 7%	15.9%	16.3%	14.1%	13.0%
Gearing	Less than 65%	67.0%	64.6%	63.9%	63.8%

This table shows that Scottish Water at least complies with the targeted value for each ratio (with the exception

of 'debt to RCV') in each year. Scottish Water's overall financial strength, as measured by the debt to RCV ratio, improves modestly over the regulatory control period. We believe that this financial performance is consistent with the Guidance that we received from Ministers.

Public expenditure

The revenue caps set out below require Scottish Water to take on considerable new debt during the next four years. This net new debt counts as public expenditure.

In the Minister's February statement, Scottish Water was allowed £182 million of public expenditure a year. Scottish Ministers also allowed Scottish Water to carry forward any unused public expenditure from the 2002-06 regulatory control period.

⁴⁰ Includes depreciation on disposal of non-infrastructure assets.

⁴¹ Includes working capital adjustment.

The use of public expenditure is summarised in Table 4.10.

Table 4.10: Public expenditure 2006-10 (outturn prices)

		2006-07	2007-08	2008-09	2009-10
2002-06 carry over	£256.0m				
Available public expenditure at start of year (including carry-over)		£438.0m	£495.4m	£529.4m	£493.2m
Public expenditure used		£124.6m	£148.0m	£218.2m	£270.6m
Unused public expenditure at year end		£313.4m	£347.4m	£311.2m	£222.6m

It was not possible to increase the use of public expenditure and comply fully with all of the cash-based financial ratios in each year.

We considered the impact on prices in the current and future regulatory control periods if we allowed Scottish Water to comply with all of the cash-based ratios except 'funds from operations divided by debt'. The rationale for allowing this ratio to be breached would be that Scottish Water is funded entirely by customer charges and debt and there is no indication that the Scottish Executive will seek to require Scottish Water to pay a dividend on any retained earnings. From this standpoint complying with this ratio could reasonably be regarded as challenging.

Our analysis has shown that a further small reduction in real terms in the level of charges faced by customers in this regulatory control period would have been possible if we had not required Scottish Water to comply with all of the cash-based financial ratios. However, this would have made increases above the rate of inflation more likely in the next regulatory control period. It would also have reduced the affordability of future investment programmes.

Table 4.11 summarises this analysis.

Our analysis has assumed that the required capital programme in 2010-14 is set at the same level of £2,100 million in 2003-04 prices.

Table 4.11: Effect of not complying with the funds from operations/debt ratio (outturn prices)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Revenue required (full compliance) ⁴²	£983.7m (1.82%)	£1,005.5m (2.33%)	£1,009.2m (0.36%)	£1,018.2m (0.90%)	£1,063.3m (4.43%)	£1,110.5m (4.43%)	£1,159.6m (4.43%)	£1,211.0m (4.43%)
Revenue required (not including funds from operations) ⁴³	£953.0m (-1.25%)	£941.1m (-1.25%)	£929.3m (-1.25%)	£917.7m (-1.25%)	£1,064.5m (16.00%)	£1,128.4m (6.00%)	£1,230.0m (9.00%)	£1,365.3m (11.00%)
Public expenditure (full compliance) ⁴⁴	£124.6m	£148.0m	£218.2m	£270.6m	£192.7m	£184.4m	£221.7m	£278.8m
Public expenditure (not including funds from operations)	£154.9m	£195.2m	£271.2m	£362.5m	£180.6m	£179.3m	£180.7m	£182.0m

Our view is that the revenue scenario outlined in Table 4.11 would have been inconsistent with the Ministerial Guidance⁴⁵. Our view is also that increasing borrowing further in this regulatory control period would not have been in the interests of customers. This may have resulted in a marginally better price profile today but it would have led to higher charges and larger increases in charges in the next regulatory control period.

We believe that £40 million of the public expenditure that is not used should be held in reserve by the Scottish Executive Environment and Rural Affairs Department. As we will describe in Chapter 6, there is an interim determination process. This is only triggered when a certain threshold is breached and the costs incurred are outside the control of management. Our analysis suggests that £40 million may be required before it would be possible to trigger an interim determination. This lending should only be made available to Scottish Water with the agreement of the new Water Industry Commission and only to cover the costs of events that are outside the control of management.

It is for the Scottish Executive to decide how it would deal with under-performance against the final determination. Our view remains that customers should not be asked to pay twice for the same output.

Summary income and expenditure account

The summary income and expenditure account is set out in Table 4.12. A more detailed account is available in Appendix 15. The appendix sets out the full results of our financial model and the modelling assumptions used.

Table 4.12: Summary income and expenditure accounts 2005-10 (current cost basis, outturn prices)

	2006-07	2007-08	2008-09	2009-10
Turnover	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Operating costs	-£394.5m	-£402.4m	-£413.4m	-£429.6m
Infrastructure renewals charge	-£88.6m	-£91.2m	-£94.0m	-£96.8m
Current cost depreciation	-£188.8m	-£212.8m	-£232.4m	-£254.0m
Operating surplus before working capital adjustments	£310.8m	£299.0m	£269.4m	£237.8m
Working capital adjustments	£2.8m	£2.4m	£2.7m	£2.9m
Operating surplus before interest	£313.6m	£301.4m	£272.1m	£240.6m
Net interest payable	-£149.6m	-£153.9m	-£160.5m	-£170.5m
Net gain/(loss) on disposal of assets	£0.0m	-£0.1m	-£0.1m	-£0.1m
Current cost financing adjustment	£3.1m	£4.4m	£5.3m	£5.9m
Surplus before taxation	£167.2m	£151.8m	£116.8m	£75.9m
		1		
Taxation (including deferred tax)	-£74.5m	-£74.1m	-£64.0m	-£51.8m
Current cost surplus for financial year	£92.7m	£77.7m	£52.8m	£24.1m

Summary balance sheet

The summary balance sheet is set out in Table 4.13. A more detailed balance sheet is available in Appendix 12.

⁴² Full compliance in the last year of each regulatory control period (2010 and 2014).

⁴³ Public expenditure limit increases the amount of revenue from customers.

⁴⁴ Public expenditure unused in the 2006-10 regulatory control period is carried forward to 2010-14.

⁴⁵ Ministerial Guidance – see Appendices 4 and 15.

Table 4.13: Summary balance sheets 2006-10 (current cost basis, outturn prices)

	2006-07	2007-08	2008-09	2009-10
Tangible assets	£25,379.8m	£26,430.8m	£27,531.3m	£28,696.5m
Investments	£0.1m	£0.1m	£0.1m	£0.1m
Working capital	-£117.7m	-£132.6m	-£142.9m	-£161.2m
Net operating assets	£25,262.2m	£26,298.3m	£27,388.4m	£28,535.4m
Other short-term assets	-£36.1m	-£38.2m	-£34.0m	-£33.8m
Other long-term assets	-£217.8m	-£263.8m	-£293.2m	-£324.4m
Net assets employed	£25,008.3m	£25,996.3m	£27,061.2m	£28,177.1m
Gorvernment loans	£2,553.6m	£2,708.2m	£2,934.3m	£3,207.9m
Other reserves (including current cost reserve)	£22,059.5m	£22,815.2m	£23,601.2m	£24,419.4m
Total retained earnings	£395.2m	£472.9m	£525.7m	£549.8m
Total capital and reserves	£25,008.3m	£25,996.3m	£27,061.2m	£28,177.1m

Summary cash flow statements

The summary cash flow account is set out in Table 4.14. A more detailed cash flow account is available in Appendix 12.

Table 4.14: Summary cash flow statements 2006-10 (current cost basis, outturn prices)

	2006-07	2007-08	2008-09	2009-10
Current cost operating profit	£310.8m	£299.0m	£269.4m	£237.8m
Total depreciation, amortisation and infrastructure charges	£277.4m	£304.1m	£326.4m	£350.8m
Change in working capital	-£29.8m	£10.3m	£5.7m	£14.5m
Net cashflow from operations	£558.3m	£613.4m	£601.5m	£603.1m
Infrastructure renewals expenditure	-£95.2m	-£91.2m	-£94m	-£96.8m
Other net additions	-£438.1m	-£500.8m	-£538.4m	-£591.7m
Net cashflow from operations less investment	£25.0m	£21.4m	-£30.8m	-£85.4m
Financing cash flow				
Loans repaid	£59.6m	£68.0m	£81.1m	£66.4m
Interest paid	£149.6m	£153.9m	£160.5m	£170.5m
Taxation paid	£0.0m	£15.5m	£26.8m	£14.8m
New debt (including refinancing)	£184.1m	£216.0m	£299.3m	£337.0m

Other financial indicators

In Table 4.15 we set out other financial information from the financial model. This includes the two ratios from the Ofwat 1999 price determinations that we used at the time of the last Strategic Review of Charges. Other information includes the average interest rate and other traditional accounting ratios.

Table 4.15: Other financial indicators 2006-10

	2006-07	2007-08	2008-09	2009-10
Debt payback period (EBITDA basis)	4.6	4.4	4.9	5.3
Debt payback period (EBDA basis)	6.3	6.1	7.1	7.7
Cashflow to capital expenditure ratio (EBDA basis)	76.6%	75.0%	65.5%	60.7%
Weighted average cost of debt	5.8%	5.6%	5.5%	5.3%
Historic cost, return on capital employed	5.0%	4.5%	3.5%	2.6%
Current cost, return on capital employed	0.37%	0.30%	0.20%	0.09%

Conclusion

This chapter has explained how we calculated the revenue cap and has shown the information that we included in the financial model. We have also set out the target values of the financial ratios by which we have judged the financial sustainability of Scottish Water. As is appropriate for a debt funded company, we have targeted those ratios which are cash based and indicate the affordability of the company's debt. The ratio of debt to RCV is useful as a general indicator of the financial health of Scottish Water. In line with the Ministerial Guidance the financial health of Scottish Water would improve marginally over this regulatory control period if Scottish Water were to perform at the level assumed in this draft determination.

It would, of course, not be in the customer interest for Scottish Water to cut corners on either the investment delivery or level of service to customers in order to meet its financial targets. Our annual reports will comment on Scottish Water's progress.

Section 2: Setting the required level of revenue Chapter 5: Revenue and investment comparisons with England and Wales

Introduction

In the previous chapter we outlined the level of revenue that we believe Scottish Water requires to meet the objectives set by Ministers and to deliver an improving level of service to customers.

In this chapter we look at this level of revenue in comparison with the revenue of the licensed companies south of the border. We also consider the level of investment that will be delivered during the 2006-10 regulatory control period and compare this at an absolute level and on a per connected property basis with the level of investment south of the border.

The chapter ends with a statement of Scottish Water's current performance in terms of its overall performance assessment (OPA). The underlying premise of this draft determination is that Scottish Water should provide a level of service that is broadly equivalent to that which is offered to customers in England and Wales.

Revenue per connected property

The level of revenue required by Scottish Water is set out in Table 5.1.

Table 5.1: Scottish Water required level of revenue (2005-10)

	2005-06	2006-07	2007-08	2008-09	2009-10
Revenue (nominal prices)	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Revenue (03-04 prices) ⁴⁶	£913.1m	£907.1m	£905.6m	£886.7m	£872.8m

The estimated number of connected properties is shown in Table 5.2.

Table 5.2: Estimated number of connected (billed) properties 2005-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Number of connected (billed) water properties	2,323,117	2,340,295	2,357,470	2,374,647	2,391,824

The growth in the number of connected properties primarily reflects an increase in the number of households connected, but also some growth in the number of business properties connected. This increase in the number of non-household properties connected results from significant investment in removing development constraints.

The level of revenue relative to the number of connected properties is outlined in Table 5.3.

Table 5.3: Estimated revenue per connected property 2005-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Revenue per connected property (nominal prices)	£425	£430	£436	£435	£435
Revenue per connected property (03-04 prices)	£402	£396	£393	£382	£373

Table 5.4 compares the revenue allowed to Scottish Water on a per connected property basis with that which is allowed to the water and sewerage companies south of the border.

Table 5.4: Estimated revenue per connected properties 2005-10 for all water and sewerage companies in Great Britain

Revenue per connected property (2003-04 prices)	Average revenue 2005-10 ^{47, 48}	Average properties ⁴⁹	Average revenue per property
Scottish Water	£897m	2.30m	£389
Anglian	£812m	2.21m	£368
Welsh	£542m	1.30m	£417
Northumbrian	£514m	1.49m	£345
Severn Trent	£1,127m	3.50m	£322
South West	£361m	0.70m	£516
Southern	£550m	1.42m	£387
Thames	£1,333m	4.42m	£302
United Utilities	£1,238m	2.97m	£417
Wessex	£337m	0.82m	£411
Yorkshire	£700m	2.06m	£340

The average revenue raised by Scottish Water on a per connected property basis is £389. In this comparison,

⁴⁶ Figures deflated by financial year average RPI.

⁴⁷ Ofwat did not disaggregate revenue or number of properties on a year-to-year basis. Instead it used the entire 2005-10 period. As such, Scottish Water's calculations also include 2005-06 revenue and properties for comparison purposes.

⁴⁸ Ofwat's final determinations uses 2002-03 price base, therefore revenue figures were indexed by financial year average RPI to obtain 2003-04 prices.

Simple average between water and waste water connections.

Scottish Water benefits from its lower cost of capital relative to the equity financed companies south of the border. The cost to customers in Scotland if the cost of capital available to Scottish Water were the same as the rate of return allowed by Ofwat in its 2004 final price determinations is £130 million (in average 2003-04 prices) million. This is equivalent to an extra £56.30 (average 2003-04 prices) per connected property. This would give Scottish Water (at £446) the second highest revenue per connected property in Great Britain.

Average household bill

The estimated number of households connected is shown in Table 5.5.

Table 5.5: Estimated number of connected (billed) household properties 2005-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Water	2,201,798	2,216,799	2,231,797	2,246,797	2,261,797
Waste water	2,123,258	2,138,254	2,153,260	2,168,260	2,183,258

The growth in the number of households connected is broadly in line with recent experience and takes account of the estimated house building programme that is reflected in the Ministers' objectives for removing development constraints.

The level of household revenue relative to the number of households connected is outlined in Table 5.6. This is the average household bill

Table 5.6: Average household bill 2005-10 (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Water bill	£137	£139	£142	£143	£143
Water waste bill	£154	£156	£159	£160	£160
Total bill	£291	£295	£302	£303	£303

Table 5.7 compares Scottish Water average household bills with the water and sewerage companies south of the border.

Table 5.7: Estimated average household bill 2005-10 for all water and sewerage companies in Great Britain (outturn prices)

Average household bill (outturn prices) ^{50,51}	2005-06	2006-07	2007-08	2008-09	2009-10
Anglian	£312	£317	£330	£344	£357
Dwr Cymru	£334	£349	£368	£387	£402
Northumbrian	£251	£265	£278	£287	£297
Severn Trent	£252	£267	£277	£289	£303
South West	£399	£439	£483	£496	£507
Southern	£300	£316	£331	£355	£370
Thames	£254	£267	£277	£287	£298
United Utilities	£287	£313	£333	£350	£368
Wessex	£311	£332	£358	£379	£396
Yorkshire	£263	£281	£298	£315	£329
England and Wales	£279	£295	£310	£324	£337
Scottish Water	£291	£295	£302	£303	£303

Scottish Water's average household bill is £303 in 2009-10. This will constitute the third lowest household bill in Great Britain.

If household customers of Scottish Water had to pay charges based on Ofwat's assessment of the market cost of capital, they would have bills some £50 (17%) higher.⁵²

Total level of investment

Total investment in this regulatory control period will amount to £2.1 billion (2003-04 prices) after efficiency. This is an increase of 12.4% in real terms and 27.3% in nominal terms from the 2002-06 regulatory control period. This investment programme is without precedent in Scotland.

The total investment to be delivered in Scotland stands comparison with the likely level of investment south of the border in the same period. Three companies south of the border are larger than Scotlish Water in terms of the number of customers served. Two companies are broadly the same size in terms of customers served. The relative size of Scotlish Water is shown in Table 5.8.

⁵⁰ Average household bill is the sum of the average water bill plus the average waste water bill.

⁵¹ Ofwat's final determination figures were indexed by 3.45% (as per the Ofwat Tariff Report 2005-06) and then by 2.5% on the following years.

 $^{^{52}\,}$ Revenue from household customers would have to increase by £111 million.

Table 5.8: Relative size of Scottish Water

Company	Water customers ⁵³	% of Scottish Water	Sewerage customers ⁵⁴	% of Scottish Water
Thames	3.39m	144%	5.24m	233%
Severn Trent	3.22m	137%	3.63m	161%
United Utilities	2.95m	125%	2.89m	128%
Anglian	1.91m	81%	2.45m	109%
Yorkshire	2.01m	85%	2.00m	89%
Scottish Water	2.36m	100%	2.25m	100%

The planned investment for each of these companies during the period 2006-10 (in 2003-04 prices) is outlined in Table 5.9.

Table 5.9: Planned investment for the largest water and sewerage companies in England and Wales

(Figures in 03-04 prices) ⁵⁵	2005-06	2006-07	2007-08	2008-09	2009-10	Total (2005-10)	Total (2006-10)
Anglian	£271m	£325m	£353m	£315m	£282m	£ 1,545m	£1,275m
Severn Trent	£415m	£495m	£501m	£457m	£475m	£ 2,343m	£1,928m
Thames	£688m	£725m	£645m	£615m	£ 615m	£ 3,289m	£2,601m
United Utilities	£553m	£635m	£593m	£461m	£ 392m	£2,635m	£2,082m
Yorkshire	£357m	£318m	£309m	£295m	£ 247m	£1,526m	£1,169m
Scottish Water	£583m	£485m	£517m	£534m	£ 564m	£2,683m	£2,100m

The planned programme of investment in Scotland is relatively very high. Only Thames Water, which supplies about twice as many customers, has a larger investment programme.

We also looked at the investment programmes of the companies south of the border since privatisation of the water industry in 1989. For the purposes of the analysis, we compared the level of investment in 2003-04 prices. Our analysis shows that only three companies have delivered a larger capital programme (over a four-year period). Indeed, Scottish Water's programme is the fourth largest four-year investment programme in the recent history of the water and sewerage industry in the UK. Neither of the companies that are broadly similar in size to Scottish Water has ever delivered a capital investment programme of this size. Indeed, the current planned programme is 13% and 22% larger than the largest programme ever delivered by Anglian Water or Yorkshire Water respectively.

Investment per connected property

Scottish Water's investment programme is also very large relative to its total number of connected properties. We compared Scottish Water's level of investment per connected property with those of the companies south of the border. The average number of connected properties for each of the companies is shown in Table 5.10.

⁵³ As of 2003-04 (Ofwat June Return, Scottish Water Annual Return).

⁵⁴ Ibi

⁵⁵ Source: Ofwat RD 07/05, Regulatory capital values 2005-10. April 22 2005. Figures were deflated by COPI to 2003-04 prices.

Table 5.10: Average number of connected properties (2005-10)⁵⁶

	Water	Sewerage	Simple average
Anglian	1.94	2.47	2.21
Dwr Cymru	1.29	1.31	1.30
Northumbrian	1.84	1.14	1.49
Severn Trent	3.30	3.70	3.50
South West	0.74	0.66	0.70
Southern	1.03	1.81	1.42
Thames	3.49	5.36	4.42
United Utilities	3.00	2.94	2.97
Wessex	0.54	1.10	0.82
Yorkshire	2.06	2.06	2.06
England and Wales	19.22	22.55	20.89
Scottish Water	2.36	2.25	2.30

Table 5.11 shows total investment in 2005-10 for every water and sewerage company in Great Britain. It also shows the total investment per connected property. Only South West Water has a comparable programme in terms of investment per connected property and this programme is very much smaller in absolute terms. Scottish Water's programme is some 31% larger on a per connected property basis than the largest programme of one of the companies of a similar or larger size.

Table 5.11: Total investment per connected property in period 2005-10

	Total investment (2005-10) ⁵⁷		
Anglian	£1,545m	2.21m	£701
Dwr Cymru	£1,218m	1.30m	£937
Northumbrian	£891m	1.49m	£598
Severn Trent	£2,343m	3.50m	£669
South West	£811m	0.70m	£1,158
Southern	£1,663m	1.42m	£1,171
Thames	£3,289m	4.42m	£744
United Utilities	£2,635m	2.97m	£887
Wessex	£804m	0.82m	£981
Yorkshire	£1,526m	2.06m	£740
Scottish Water	£2,683m	2.30m	£1,164

⁵⁶ This calculation includes 2005-06 as Ofwat did not disaggregate connected properties on a year-by-year basis.

⁵⁷ Figures in 2003-04 prices.

⁵⁸ Simple average between water and waste water connections.

Investment per household

The level of investment on a per connected household basis shows a similar pattern. This is outlined in Table 5.12.

Table 5.12: Total investment per connected (billed) household

	Total investment (2005-10)	Average number of households (2005-10) ⁵⁹	Total investment per household (2005-10)	Average yearly investment per household
Anglian	£1,545m	2.08m	£743	£149
Dwr Cymru	£1,218m	1.21m	£1,007	£201
Northumbrian	£891m	1.41m	£632	£126
Severn Trent	£2,343m	3.25m	£720	£144
South West	£811m	0.64m	£1,274	£255
Southern	£1,663m	1.34m	£1,245	£249
Thames	£3,289m	4.17m	£789	£158
United Utilities	£2,635m	2.78m	£948	£190
Wessex	£804m	0.75m	£1,074	£215
Yorkshire	£1,526m	1.94m	£789	£158
Scottish Water	£2,683m	2.19m	£1,224	£245

This total investment per connected household compares with an average household bill in 2003-04 prices over the 2006-10 regulatory control period of £301 per year.

Current and expected overall performance assessment comparison

We believe that the customers of Scottish Water are entitled to receive a level of service that is broadly equivalent to that provided to customers south of the border. We have adopted the OPA measure, which Ofwat developed to measure the overall level of service provided by companies to their customers. In the annual levels of service reports that we have published to date we focused on measuring and comparing those parameters for which information was readily available. In this draft determination we have broadened our analysis to include all of the parameters measured by Ofwat that have a defined equivalent in Scotland.

In determining the scope for efficiency, we have assumed that Scottish Water will make significant

Simple average between water and waste water connections. Ofwat's final determinations did not disaggregate household from non-household customers or on a year-on-year basis. Therefore, we have assumed that these will maintain the same ratio as registered in Ofwat's June Return 2003-04.

progress in improving its level of service to customers. The OPA scores for each company in 2003-04 are set out in Figure 5.13.

Figure 5.13: OPA scores in 2003-04



We have assumed that Scottish Water's performance should improve markedly.

Performance ahead of the milestone level would be encouraging and would mean that we can be confident that Scottish Water is improving its efficiency. If Scottish Water does not achieve the milestone, we would adjust our assessment of Scottish Water's operating cost performance to take account of the shortfall in customer service.

The milestones⁶⁰ are outlined in Table 5.14. For reference, in 2003-04 the best performing company south of the border scored 323 and the poorest performing company scored 274.

Table 5.14: OPA milestones for Scottish Water

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPA	159	159	159	195	232	268	305

Conclusion

This draft determination has limited the required level of revenue for Scottish Water during the 2006-10 regulatory control period to an increase of 5.51% in

nominal terms. This is a decrease of 4.87% in real terms. In the previous chapter we showed that this had not been achieved to the detriment of future customers since Scottish Water should end the regulatory control period in sound financial health.

In this chapter we have looked at the revenue levels of the companies south of the border and the investment they have been required to deliver. Our analysis demonstrates that the level of revenue set in this draft determination does not cut corners in terms of investment in improving public health and environmental compliance, or in easing development constraints.

The level of revenue that we have set also recognises that Scottish Water has to make progress in the level of service it provides to customers. To this end, we have allowed sufficient operating costs such that there should be a considerable improvement in the overall level of service provided to customers during this regulatory control period.

The levels of service which underpin the Review and the measurement of those levels of service are discussed in more detail in Chapter 14 of Volume 6.

Section 2: Setting the required level of revenue Chapter 6: Interim determinations and the logging up and down process

Introduction

Regulatory reviews occur at fixed intervals. In Scotland, a Strategic Review of Charges is carried out every four years, while in England and Wales a price review is carried out every five years.

Before the Water Services etc. (Scotland) Act 2005 was passed, the Water Industry Commissioner for Scotland provided advice to Scottish Ministers on charges. Ministers could commission advice whenever they considered it necessary. In this framework, there was no need for a specific process for interim determinations since it was for Ministers to judge when advice needed to be revisited.

The Water Industry Commission has to ensure that Scottish Water delivers the objectives of Ministers at the lowest reasonable overall cost. Scottish Water has to be able to recover the costs of any unexpected expenditure that results from unforeseen circumstances outside management control (rather than from underperformance).

It is important to differentiate between cost problems that arise and are reasonably within the control of managers and those that are genuinely outside the control of management. The regulatory framework needs to be able to respond in an effective and timely way to unexpected costs that are outside the control of management. It is for the Scottish Executive to decide on an appropriate course of action if Scottish Water does not meet the terms of the determination of charges. Our view is that customers should not be asked to pay twice for the same outputs.

This chapter explains that we intend to adopt two mechanisms that have been used by Ofwat in England and Wales. The first is the mechanism for carrying out interim determinations of charge limits between regulatory reviews. The second is the approach of logging up and down at a regulatory review. In adopting these mechanisms we have sought to ensure that we have created a regulatory framework that is sufficiently flexible to allow for significant changes that are outside

the control of management and one that does not create too much uncertainty for customers. We believe that Ofwat's tried and tested process for interim determinations is an appropriate response.

In this draft determination, we forecast the costs that Scottish Water should incur to deliver the Ministers' objectives for the water industry for the next regulatory control period. Our conclusions are based on an assessment of the scope for Scottish Water to improve its efficiency. We believe that if it carries out its functions efficiently and effectively, the revenues that Scottish Water will receive from its customers will be sufficient to cover its costs in full.

The chapter explains:

- what happens if Scottish Water incurs extra costs and they were within the control of management;
- the process of interim determinations and logging up and down and when they are appropriate;
- Ofwat's use of interim determinations and logging up and down; and
- how we have amended the approach to reflect the situation in Scotland.

In general, we intend to replicate as much of the Ofwat process as is possible given the structure of the industry in Scotland. Clearly, we are not able to use licence conditions⁶¹. However, we consider that it is possible to use the business plans and the determination of charges to highlight issues that may cause an interim determination to be appropriate. We have used Scottish Water's second draft business plan to identify many of the material risks that are outside the control of management.

Underperformance of the charges determination

The Ministerial Guidance states that the Scottish Executive will not increase its lending to Scottish Water to meet the cost of achieving objectives that have already

⁶¹ Each of the companies south of the border operates under a licence. The licence sets out the company's responsibilities and how prices will be set. It also sets out the mechanism for price changes during a regulatory control period.

been funded through agreed levels of lending and the charge limits set in a determination. As the statement observes, this provides Scottish Water with firm financial limits within which it must operate during the regulatory control period.

If Scottish Water does not meet the level of performance set out in the determination of charges, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view, such a course of action should not have an adverse impact on customers.

The process for measuring and reporting on any underperformance would be our annual reports on costs and performance, investment and asset management and customer service. The costs and performance report would highlight the extent of financial underperformance that has accrued. It will be important for Ministers to decide how this should be addressed. During the regulatory control period, there is a possibility that underperformance in an early year could be compensated by out-performance in a future year. However, at the next determination of charges, Ministers would need to decide how the costs of any remaining underperformance should be met. It is important to note that an interim determination of charges would not be an appropriate solution to a problem of this type.

Interim determinations are designed to respond to changes in the level of cost incurred by regulated companies that are outside the control of management.

Interim determinations in England and Wales

An interim determination is a reconsideration of a company's price limits that could be undertaken between formal price reviews. The reconsideration is carried out in the light of a particular set of circumstances or factors (outside management control) that were not taken into account at the previous Review. Either the company or the regulator may initiate an interim determination.

An interim determination is not a 'mini price review'. The full range of factors that are considered by the regulator at a price review are not considered at an interim

determination. Only those circumstances that have triggered the interim determination will be taken into account.

In England and Wales, the factors that can trigger an interim determination fall into two categories:

- relevant changes of circumstance (RCCs), which are factors that are recognised in the company licences, ie the Instruments of Appointment; and
- notified items (NIs), which are factors that were identified and noted at the last price review, but were not allowed for in the determination of prices.

In addition, some water and sewerage company licences refer to any other circumstance (other than a relevant change of circumstance) that has a material impact on the company. The impact on the company is described in the company licences as:

- "(a) a substantial adverse effect on the Appointed Business or on its assets, liabilities, financial position, or profits or losses, not being one which would have been avoided by prudent management action taken since the transfer date; or
- (b) a substantial favorable effect on the Appointed Business, or on its assets, liabilities, financial position, or profits or losses, being one which is fortuitous and not attributable to prudent management action."

Relevant changes in circumstance (RCCs)

RCCs refer to the variations in circumstances, as laid down in Condition B of the company licences, in respect of which Ofwat may make adjustments to price limits.

There are four principal relevant changes in circumstance:

RCC 1 – new legal requirements: a new or changed 'legal requirement' affecting companies in their capacity as water or sewerage undertakers. The change could be a legal requirement ceasing to apply, being withdrawn or

not being renewed. New or changed legal requirements include the impact of:

- national legislation;
- regulations made by the Council or Commission of the European Communities;
- undertakings given to the Secretary of State by the Appointed Business, and accepted by the Secretary of State: and
- legal judgements (ie decisions made in courts of law).

RCC 2 – proceeds from the disposal of land: a difference in the proceeds of land disposals from that assumed when price limits were last set.

RCC 3 – failure to take steps: the Appointee has failed to take steps that the determination assumed it would take in order to comply with a legal requirement. As a result the amount allowed by the determination is substantially greater than the costs incurred, and the purpose has not been otherwise achieved.

RCC 4 – relative price effects (RPE): the cost of an allowed capital investment is different from what was assumed at the last price review due to an increase or decrease in capital prices relative to the retail price index (RPI). The indicator of the relevant prices is the Notified Index, which is the change in the construction output price index (COPI) relative to RPI. This relevant change in circumstance applies only to Anglian Water Services Ltd, United Utilities Water plc, Yorkshire Water Services Ltd and Cholderton and District Water Company Ltd.

Notified items

At a price review, Ofwat may identify items that could have an impact on the companies' turnover. There may be uncertainty about whether the items will materialise, or about the size of any impact if they do. Ofwat can formally acknowledge that these items have not been allowed for, either in full or at all, by recording them as notified items in the determination.

If, as a result of a factor identified in a notified item, actual costs or revenues differ from the levels assumed in the determination, these differences can trigger an interim determination.

In its final determination of price limits for the period 2005-10, Ofwat set out the following notified items:

- A variation (increase or shortfall) in the number of customers requesting meters, free of installation charge, compared to the numbers assumed when the price limits were set.
- Increases in bad debt and the costs of managing debt. At the 1999 price review, this notified item was explicitly linked to the prohibition on disconnection of domestic premises for the non-payment of bills. The text of the notified item has now been modified because Ofwat acknowledges that the prohibition is only one element of the environment in which the water and sewerage companies operate. Ofwat does not expect this notified item to be necessary after 2009.
- Increases in charges for abstractions and discharges to controlled waters. The Environment Agency had consulted upon changes to the abstraction charges scheme, but the outcome remained uncertain at the time of the final determinations and companies could face increases in costs above those assumed in price limits. Charges for discharges to controlled waters could also change as the result of a ruling by the Court of Appeal in 2001, although where such costs are known, they have been incorporated in price limits.
- Charges for lane rental/traffic management, which could result from the Traffic Management Act 2004 or from the conclusion of two trials of a lane rental system. The impact of these potential charges was uncertain at the time of the final determinations, but efficient companies can request a revision to price limits if the impact is significant.
- Increases in the taxation of infrastructure expenditure arising from the introduction of International Financial Reporting Standards (IFRS).

Once again, the impact of this change is uncertain, but Ofwat took the view that companies should be protected from any resulting significant changes in taxation costs. Companies are expected to behave in a tax efficient way and to pursue the solution best designed to minimise the impact of tax changes upon customers' bills.

Logging up and down in England and Wales

Whereas an interim determination occurs between reviews, logging up and down is an adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on prices only in the next regulatory control period.

In June 2002, Ofwat issued a consultation paper on logging up and down⁶². This paper provides a description of the logging up and down process:

"Between periodic reviews there may be changes to the outputs that a company is required to deliver. Where a change, either in terms of additional obligations or the removal of obligations, is material this can trigger an interim determination of price limits. If the change is not sufficient to trigger an interim determination (or if a company or we choose not to seek one), we provide a mechanism for the company to 'log up' any reasonable net additional costs to be taken into account at the next periodic review. Similarly reductions in outputs required are 'logged down'."

The consultation paper goes on to explain:

"The logging up and down process deals primarily with smaller changes to the items specified in the licence. If the change is not sufficient to trigger an interim determination (or if the company or we choose not to seek one), we provide a mechanism for the company to 'log up' any reasonable net additional costs to be taken into account at the next periodic review. Similarly reductions in outputs required are 'logged down'. The logging up mechanism is not specifically included in companies'

licences although such a mechanism is implied by the need to reflect in the periodic review the actual circumstances faced by companies.

The net amount of logged up capital expenditure taken into account at the 1999 periodic review was around £600m. A similar amount was logged up at the 1994 periodic review. Additional operating costs arising from changes to the quality enhancement programme, which arose in the period 1995-96 to 1999-2000 were £21m.

There are differences in the way the logging up and interim determination processes deal with changes in revenues and costs. The interim determination mechanism treats the changes as if they had been known when we originally set price limits. The logging up mechanism takes into account the financial impacts of the changes from the start of the next price setting period only.

The shortfalls process deals with delays in delivering outputs compared to the assumptions we made when we set price limits. There are differences in the way in which we treat logging down of outputs and shortfalls in outputs."

The rationale for interim determinations and logging up and down

Price setting is forward looking. Carrying out a regulatory review involves setting charge caps, or revenue caps, to cover a period of four or five years in the future. The regulatory review process typically begins two years before the end of the current regulatory control period. In Scotland, this means that we have to make judgements about the appropriate level of costs six years hence.

We would only seek to adjust a determination of charges if the circumstances of the adjustment were truly outside the control of management.

Examples of factors that we would consider to be within and outside the control of management are outlined in Table 6.1.

⁶² Ofwat publication June 2002, Logging up and down – dealing with shortfalls and outputs and new requirements between periodic reviews: a consultation paper.

Table 6.1: Examples of factors within and outside the control of management

Within management's control	Outside management's control
Obtaining planning permission	Changes in planning law
Inflation risks caused by advancing or delaying the delivery of the investment programme	Capital inflation difference on planned schedule of investment delivery
	Legal changes
	Price increases caused by regulatory settlements for electricity (to the extent not captured in inflation indices)

The regulatory framework in Scotland ensures that improvements in efficiency by Scottish Water will benefit customers.

"

However, managers cannot control all of the company's costs and they cannot influence all of the company's revenues. Customers will benefit if managers are encouraged to improve those things that they can control, either to reduce the company's costs or to secure revenues. In contrast, there is no benefit to customers if managers are punished or rewarded for things that are outside their control.

There are two situations in which regulators might consider taking action between Reviews if their assumptions turn out to be inaccurate. On the one hand it is possible that:

- costs are significantly higher, or revenues are significantly lower, than was assumed at the Review; and
- managers had no control over the causes of the higher costs or lower revenues and they had no way of addressing the issue once it had arisen.

In this case the incentives placed on managers are not improved by forcing the company to operate within the charge caps or revenue caps decided upon at the determination. Instead, there is a case for the regulator to make an adjustment to increase the charge cap or revenue cap.

On the other hand, it is possible that:

- costs are significantly lower, or revenues are significantly higher, than was assumed at the Review;
 and
- managers had no responsibility for the causes of the lower costs or higher revenues.

In this case there is no justification for allowing the charge caps or revenue caps that were decided upon at the determination. Instead, there is a case for the regulator to make an adjustment to reduce the company's charge cap or revenue cap and to pass the benefit to customers.

If costs are materially different from those forecast in a price review as a result of management action, no change is normally made to the determination.

The interim determination process is important in ensuring that charges reflect costs that have been reasonably incurred.

In the case of an interim determination⁶³ in England and Wales, Ofwat requires the impact on the company from a change in circumstances to pass a materiality threshold. This ensures that customers do not see continuous small changes in charges relative to those that were agreed at the determination.

Smaller changes in costs and revenues which do not pass the materiality threshold, but which may nevertheless have a significant impact on the company, are dealt with at the next review through logging up and down. This ensures that customers pay charges that reflect costs.

The logging up and down mechanism also has important incentive properties in the regulatory capital value approach to price setting. Managers know that if they fail to make the investments they have promised, and fail to deliver the outputs that customers expect, this will affect the regulatory capital value of the company at the next review. If a company does not deliver the agreed capital programme, the RCV would be adjusted downwards to reflect both the non-delivered items and any timing difference in the delivery. A lower RCV will result in Ofwat

⁶³ A short-hand acronym 'IDOK' is sometimes used by commentators (interim determination of 'K', price limit).

setting lower prices. Managers therefore have an incentive to deliver the agreed programme of investment and to ensure that the investment provides customers with the outputs that are expected.

The mechanics of interim determinations in Scotland

The interim determination process will consist of a number of well-defined steps. An important feature of these steps is that they are transparent. We expect that all requests for a change in the charge cap between regulatory reviews will be published. We expect the new Water Industry Commission will publish its assessment of the cost and revenue impacts of the notified items included in this draft determination. In addition, before any charge cap is changed we expect the new Water Industry Commission would consult with industry stakeholders and customers.

This transparency is an important part of the regulatory framework. Regulation provides customers with certainty by setting charge caps for a period of time. If we change charge caps before the next regulatory review we risk causing uncertainty and inconvenience to customers. We also risk undermining the credibility of the charge caps that are set at future reviews.

In order to avoid these problems it must be clear to customers that any changes to charge caps or revenue caps that are made between reviews are not arbitrary. Customers should be assured that any changes are justified and that they are made according to a well-defined process that is based on a clear set of rules.

The steps in our approach to an interim determination will be as follows:

Step 1: The interim determination must be initiated.

Either Scottish Water or the new Water Industry Commission can submit a notice for an interim determination. If either does, the other can submit a counter claim within a limited period. Scottish Water must request an interim determination by 1 September of the year before the charging year for which it is

seeking revised charge limits. The charging year begins on 1 April each year. It follows that, for example, if Scottish Water wished to have its charges revised for April 2007, it would have to apply for an interim determination before 1 September 2006.

Step 2: The Water Industry Commission confirms that the factors forming the basis of the claim are within the current notified items.

Following a request for an interim determination, we expect the Water Industry Commission will confirm that the factors declared fall within the current definitions of notified items. The list of notified items for Scottish Water is more extensive than it is for the companies in England and Wales because Scottish Water does not have a licence. The notified items are set out at the end of this chapter.

Changes that affect the economy in general, for example the April 2003 change in National Insurance contributions, are picked up in the RPI element of the charge cap. A company could not, therefore, use this factor to request an interim determination. If general factors such as this were included in the interim determination, their effect would be double counted.

Step 3: For all factors taken together the Commission applies a materiality test.

We believe that the materiality threshold applied by Ofwat would also be appropriate for the Scottish water industry. This means that the combined net present value (NPV) of all of the factors must be more than 10% of Scottish Water's turnover. However, we would not intend to apply the triviality threshold on individual variances as Ofwat does⁶⁴. This is in recognition of the financial framework within which Scottish Water operates. So, for example, if one factor if worth 4% of turnover, another is worth 6.5% and a third is worth 0.5%, the total effect is 11%. This is sufficient to trigger an interim determination because the sum of all three factors is greater than 10% of turnover.

The test is applied by calculating the NPV of the change in cash flows resulting from the factors.

⁶⁴ If the impact of one factor is less than 1% of a company's turnover, Ofwat does not include that factor in the interim determination calculations.

- If costs are higher than forecast, the difference between forecast costs and actual costs is estimated. In the case of operating costs we would estimate the difference over a ten-year period and discount future costs at Scottish Water's allowed rate of return. In the case of capital costs the difference would be estimated for a period of 15 years from when the investment was made and discounted at Scottish Water's allowed rate of return.
- If revenues are lower than forecast, the difference between forecast revenues and actual revenues is estimated. The difference is estimated for a period of 15 years from when revenues fell below the forecast level. Again, this would be discounted at Scottish Water's allowed rate of return.

Effectively an interim determination could be triggered if there is more than about a £12 million annual change in costs that is caused by factors outside the control of managers.

Step 4: Revised charge limits are calculated.

If the materiality threshold is passed, we will calculate the required change to charges to recover the additional costs or allow for the reduction in costs. We will make our decision on changes to charge limits within three months of a request.

Step 5: Scottish Water may appeal to the Competition Commission.

If Scottish Water does not accept our assessment it may refer the issue to the Competition Commission.

Logging up and down in Scotland

We intend to adopt the broad principles of logging up and down that are used in England and Wales, but to adapt these to the financial framework within which Scottish Water operates. In its response to our methodology consultation, Scottish Water responded favourably to the idea of introducing logging up and down and interim determinations. Scottish Water also asked if the new Commission could provide it with an

annual statement of the items that had been noted as being outside the regulatory contract.

We agree with this suggestion. We intend to ask Scottish Water twice a year to identify any factors (outside the control of management) that have had an impact on its costs (either increasing or decreasing costs). The new Commission would review these claims and within three months provide Scottish Water with a statement of its view. The Commission may also identify some factors that were not raised by Scottish Water.

If these factors reached the threshold for an interim determination then either Scottish Water or the new Commission could initiate the process described above. In the interim, we suggest that Ministers should be prepared to increase their lending to Scottish Water by the value of the additional costs that Scottish Water has incurred. As a maximum, Scottish Ministers would have to retain a reserve of £40 million from the lending that they were prepared to make available to the industry to meet their objectives. In Chapter 4 we explained that some £222.6 million of borrowing that Ministers were prepared to make available was not required. We noted that Ministers could reasonably redeploy all bar £40 million of this borrowing. Scottish Ministers should retain this £40 million and should only release this lending after the new Water Industry Commission has published its assessment of Scottish Water's claims of additional costs and agreed that additional lending was an appropriate response. We would also note, however, that there appear to be quite ambitious assumptions on the outputs that may be required in the funded investment programme, which may reduce (perhaps entirely) the need for this reserve public expenditure.

In the event that an interim determination is not triggered, any variances in costs that are outside the control of management would be taken into account at the next Strategic Review of Charges.

Notified items

The notified items for this draft determination are set out in Table 6.2.

Table 6.2: Notified items for the Strategic Review of Charges 2006-10

Notified items

Inflation rates (COPI and CPI)

The definition of retail activities in the regulatory accounts

Changes in ministerial objectives for the industry

Any change in legislation that has an impact on Scottish Water's statutory obligations

Changes in the numbers of metered customers from the 2004-05 baseline

Contractual status of overhang and whether costs will increase by inflation

Corporation tax

Outcome of strategic drainage studies of the catchments for Meadowhead, Stevenston and Portobello.

Conclusion

Interim determinations and the logging up and down process act as an important safeguard for customers and for Scottish Water. They help to reduce operating risk. They also help ensure that the regulatory contract contains a tight budgetary constraint, so customers pay no more than is necessary and reasonable given the objectives for the industry set by Ministers. As such, Scottish Water should have a clear incentive to deliver the outputs included in the regulatory price settlement.

It is important to differentiate between the need for a regulatory framework to be sufficiently flexible to deal with unexpected events that are outside the control of a management and the need for an owner to manage under-performance relative to a determination of charges.

The framework that we have outlined in this chapter should ensure that Scottish Water can be confident that funds will be available to deal with any unexpected costs that they could not control. This framework is essentially the same as that which exists south of the border.

If Scottish Water under-performs the terms of the determination of charges, this is a matter that should be resolved between Scottish Water and its owner, the Scottish Executive. In our view, any such under-performance should not adversely impact the level of charges faced by customers.

Section 2: Setting the required level of revenue Chapter 7: How we propose to deal with out-performance by Scottish Water

Introduction

We discussed earlier how all of the UK economic regulators use an incentive-based approach to determining charges. Under this approach, the regulator analyses the scope for improvement in performance of the regulated company and sets appropriate charge caps. A determined management may out-perform the targets and, in doing so, will benefit shareholders (for private companies) or customers (as in the case of the not-for-dividend Welsh company, Glas Cymru). However, such out-performance will also raise the level of performance that is expected at future Reviews. It is this 'ratchet' effect that has resulted in the significant efficiency gains that have taken place south of the border.

A key element of incentive-based regulation is ensuring that the regulated company faces a tight budgetary constraint. It is this pressure that will force management to seek to improve efficiency.

This chapter outlines how we have developed our use of incentive-based regulation in our work in promoting the interests of customers of the public sector water industry in Scotland.

The regulatory contract

The 2006-10 determination of charges should be seen as an agreement between customers and Scottish Water about the level of service that will be provided during the period.

In Chapter 4 we outlined the level of revenue that we believe Scottish Water requires to deliver ministerial objectives and provide an improving level of service to customers. This level of revenue is sufficient to ensure that the Ministers' 'essential' and 'desirable' objectives for the industry can be met in full. We set out the likely profile of investment in Volume 5.

We have emphasised that the level of revenue allowed for reflects our expectation that customer service and asset performance (including leakage) would improve towards the current average level of performance south of the border. In Volume 6 we set out the improvement in the level of customer service performance that we expect. Scottish Water's customer service performance will be measured using the overall performance assessment (OPA) system that Ofwat has developed.

Out-performance of the regulatory contract

In the private sector each utility has a licence to operate which requires it to meet standards of operation that are considered appropriate in terms of social, environmental and public health objectives. The economic regulator takes account of all such issues in determining the appropriate level of charges. This determination defines the regulatory contract for a number of years.

Under the traditional approach to incentive-based regulation, a business has an incentive to meet its targets as efficiently as it can manage because it is permitted to retain the difference between the revenue from the limit on charges and the actual cost of meeting its targets. This can increase the dividends available to shareholders. The benefit to the customer is that charge limits in the following regulatory control period are set to reflect any extra efficiency gains secured by the business in the preceding period. Over time, this approach delivers higher standards at lower cost than does regulation based on setting higher, more aspirational targets.

In the private sector, regulators rely on shareholders to exert pressure on management to outperform efficiency targets. More recently, however, the creation of the not-for-dividend companies Glas Cymru and Network Rail has led regulators to consider the impact of incentive-based regulation on companies that do not have shareholders.

The founders and senior management of Glas Cymru made a commitment to create a reserve with the proceeds of out-performance. They also committed themselves to using some of the proceeds from out-performance to provide rebates to customers within the regulatory control period. Rebates were paid as soon as the company was in a strong financial position. Glas

Cymru's customers have enjoyed two such rebates. We believe that from a customer perspective there is much to commend this approach.

In this draft determination, we have built on Glas Cymru's approach while taking full account of Scottish Water's particular circumstances. We set out our approach to handling out-performance in our second open letter to Scottish Ministers. We have set charges that are consistent with Scottish Water delivering the required level of service at the lowest reasonable overall cost. We have assessed that a capital expenditure programme of £2,100 million should be sufficient to meet the Ministers' objectives, and that there is scope for Scottish Water to achieve the objectives at a lower cost.

Our view is that Scottish Water should out-perform the minimum level of performance that we have required in this draft determination. We would expect that Scottish Water would want to accept a lower charge cap in future years if it has been able to out-perform its regulatory contract.

Clearly it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the required level of performance at this lower cost. This will require the Scottish Executive, Scottish Water and the quality regulators to establish satisfactory ways to measure delivery of specified outputs. Our views on Scottish Water's financial and customer service performance are set out in this draft determination. The success of Scottish Water's management should be judged by the extent to which it delivers these outputs so that it can forego some of the revenue, which we allow in the determination.

The detail of any incentives for Scottish Water's managers would be a matter for the Scottish Executive and Scottish Water to settle in the particular context of a publicly owned business. Our view is that, from a customer perspective, any approach would need to be founded on the principle of bonuses only being paid once Scottish Water's performance had exceeded the minimum acceptable level of performance set in the final determination of Scottish Water's charges. In our view, there will need to be a direct and transparent link,

published in advance, between the bonuses available to senior management and improvements beyond the minimum acceptable level of performance.

It should be borne in mind that any unused charge cap can be brought forward to a future year's charge cap were it to be required. We would comment on the scope for Scottish Water to forego some part of its charges cap in our annual performance reports. The scope to forego part of the charges cap would require not just that Scottish Water met the financial terms of the determination of charges, but also its investment delivery obligations and the requirement to improve the level of service to customers.

Scottish Water's response to our second open letter

In its response to our second open letter to Ministers, Scottish Water agreed that incentive-based regulation was appropriate in the Scottish context. It expressed its concerns, however, that there should be an appropriate mechanism for interim determinations and that management should have the opportunity to outperform the regulatory settlement. Given that we have adopted the Ofwat approach to assessing the scope for efficiency and to interim determinations, we consider that Scottish Water's concerns on these issues are being addressed.

In its response, Scottish Water asserted that our proposal that out-performance should reduce future charge caps would limit the opportunities for it to let longer-term contracts. We are not persuaded by this argument. The approach that is taken by Glas Cymru does not seem to have affected the ability of Welsh Water to let long-term contracts. It is not clear why a management would seek to enter a contract that would not allow it to meet its regulatory targets. If such a contract *guaranteed* future out-performance at the expense of under-performance in the first year or two, there is no reason why this could not be taken into account in the annual assessment of performance.

Scottish Water also suggested that any out-performance should be re-invested to improve the level of service that is provided to customers. In principle, we would have no problem with this suggestion — provided that Ministers agreed to change their objectives for the industry and that the incremental benefits of this investment were clearly defined in advance and measurable using the OPA methodology.

Scottish Water has argued that it is financially less strong than Welsh Water and therefore it would need to build up its reserves before it could forego any part of its revenue cap. We are again not persuaded by this line of argument. Scottish Water's financial ratios during this regulatory control period would appear to be healthier than those of Welsh Water. Welsh Water's financial ratios for 2003-04 are set out in Table 7.1.

Table 7.1: Welsh Water's financial ratios in 2003-04

Financial ratio	Value
Cash interest cover	1.60
Adjusted cash interest cover	0.72
Funds from operations/debt	4.74%
Retained cashflow/debt	4.09%
Net debt/RCV	83.40%

Scottish Water asserts that it would be useful to develop a financial buffer as an insurance against operational shocks. Proposals on this were included in our letter. We suggested that it would be useful to build up a reserve (held in index linked gilts) that could be used in the event of an operational shock. Such a reserve should, however, only be accessed with the prior agreement of the new Water Industry Commission. It is not a reserve which should be accessed at the sole discretion of management.

In its response to our open letter, Scottish Water makes reference to the considerable financial buffer that Welsh Water has developed. This 'financial buffer' is somewhat different to that which we proposed in our second open letter. In the case of Welsh Water, the financial buffer is the unleveraged portion of the RCV (ie the extent to which the RCV exceeds the outstanding debt). In fact, Scottish Water's potential extra borrowing capacity, measured in this way, is greater than that of Welsh Water. The difference is that Welsh Water has access to an extra

credit line if it encounters problems and Scottish Water has no such commitment from the Scottish Ministers. However, if Scottish Water encounters a problem that is outside the control of management, the regulatory framework in Scotland will be able to respond just as effectively as the framework in England and Wales. If the problem is within the control of management, then it is a matter for the Scottish Executive to resolve.

Table 7.2: Comparison of Scottish Water and Welsh Water's situation if there is an unexpected cost event

	Scottish Water	Dwr Cymru
	Regulator will provide strong incentives to prevent customers from paying for failure	Regulator will provide strong incentives to prevent customers from paying for failure
	Ability to outperform other regulatory assumptions to compensate	Ability to outperform other regulatory assumptions to compensate
Managers can control	Additional injection of capital required. Onus would be on Scottish Ministers to provide the necessary funding, although there is no guarantee that this would be made available	Additional injection of capital required. Banks required to provide funding as part of pre-agreed credit facility. Debt:RCV would worsen, reducing financial strength and
	Debt:RCV ratio would worsen, reducing financial strength and Scottish Water would be ultimately answerable to Parliament through the Scottish Executive	the market's view of the company
	IDOKs available to company if effect is material	IDOKs available to company if effect is material
Managers cannot control	Logging up/down at the following Strategic Review of immaterial downside	Logging up/down at the following Strategic Review of immaterial downside
	No effect on the long-term financial strength of company	No effect on the long-term financial strength of company

The suggestion in Scottish Water's second draft business plan that it should raise £140 million additional revenue from customers in order to manage unforeseen risks of a broadly similar magnitude would be the most expensive possible response to the management of operational risks in the Scottish water industry. In effect, this proposal requires customers to pre-pay in the event that some unforeseen events (some within the control of management) occur.

How our approach to out-performance would work

Under our proposals, we would expect the new Water Industry Commission to take two steps to confirm that Scottish Water has met the terms of its regulatory contract:

- The Commission would assess whether the minimum acceptable levels of performance have been achieved. This would include the levels of customer service, environmental and public health compliance and the costs that underpin the charge caps set out in the determination.
- It would review performance in delivering the capital programme, indicating any variance from the agreed delivery profile (including any implications for public expenditure).

The Commission's annual costs and performance report would set out Scottish Water's financial performance for that year. This would reveal whether Scottish Water had achieved the minimum acceptable level of performance. It would also identify the scope that Scottish Water has to reduce charge caps in the subsequent year. As an example, the costs and performance report 2006-07 (the first year of the next review period) will be published in October 2007⁶⁵. This would allow Scottish Water sufficient time for the 2008-09 charges scheme to reflect lower charge caps than indicated in the determination. Scottish Water should only seek to accept a lower charges cap if it has been successful in achieving the required level of service and environmental and public health compliance at a lower cost than set out in the determination of charges.

The annual customer service report will set out the Commission's overall performance assessment, and will report on Scottish Water's performance relative to the milestones outlined in the final determination.

The annual investment and asset management report will set out the Commission's assessment of the delivery of the planned capital programme. The Commission will consult the Scottish Environment Protection Agency and the Drinking Water Quality Regulator in preparing the report to ensure that they are content with the level of compliance achieved by Scottish Water relative to their expectations at the start of the review period.

If Scottish Water were to reduce its operating costs by £10 million more than was included in charge limits, it could return this £10 million (less an appropriate allowance for employees' bonuses⁶⁶) to customers in the form of a lower charge cap in the subsequent year.

If Scottish Water delivers its planned capital programme at £10 million less than was included in charge limits, the regulatory capital value would be adjusted. A proportion of the savings (again after an allowance for employees' bonuses) would be available for further investment (for example in improving customer service), a further proportion could be made available for spend to save purposes and the remainder (after adjusting for operating costs etc) could be returned to customers. We would adopt the same approach as Ofwat uses to calculate the extent of capital expenditure out-performance. We would also make similar adjustments to the RCV to reflect this better than expected performance.

We would, however, note that it is likely to be difficult – especially in the early years of the regulatory control period – to be certain that Scottish Water would outperform in capital expenditure. Therefore, unless there are compelling reasons to review performance on capital expenditure during the regulatory control period, it is probable that performance in capital expenditure would be best addressed at the next determination of charges.

Conclusion

This chapter has outlined how we intend to measure and report on out-performance. It is important to regard the determination of charges as a regulatory contract. Scottish Water is allowed to collect a level of charges from its customers that is sufficient (together with the available borrowing) to deliver the Ministers' objectives for the water industry. It should therefore deliver these benefits to charge payers.

We believe that Scottish Water has the same scope to out-perform this draft determination as would be available to any company regulated by Ofwat. In our view, it should take a lead from Welsh Water and return any such out-performance to customers by accepting less revenue in a future year. Scottish Water certainly should have the financial strength to make this a prudent course of action. For this approach to work, managerial incentives should be linked to out-performance of the determination of charges in a direct and transparent way.

⁶⁵ In light of the significance of the costs and performance report, it will be made available to Scottish Water well ahead of publication.

⁶⁶ We would expect this allowance to be agreed between the Remuneration Committee of the Scottish Water Board and the Scottish Executive.

Section 2: Setting the required level of revenue Chapter 8: Risk analysis

Introduction

In this chapter we outline the risk analysis that we have completed to support our conclusions on the level of revenue that Scottish Water requires to meet the objectives set by Ministers and to deliver an improving level of service to customers⁶⁷.

The analysis distinguishes between factors that are within the control of management and those that are outside managerial control. If Scottish Water were to fail to meet the terms of the draft determination because of factors that are within its control, this would be a matter for the Scottish Ministers to resolve. In our view, the resolution of such an outcome should have no impact on customers. If factors outside the control of management were to arise, there would be scope for an interim determination of charges, assuming that the thresholds to trigger an interim determination are met⁶⁸. Of course, an interim determination of charges can reduce as well as increase customers' charges.

We have suggested that a maximum of £40 million should be held in reserve by the Scottish Executive Environment & Rural Affairs Department (out of the £224 million of unused public expenditure). These funds would be used to manage circumstances where unforeseen events occur that are outside managerial control, but which are not sufficiently material to trigger an interim determination. We would, however, note that there appear to be some quite ambitious outputs in the funded investment programme which, if not required, may reduce or obviate entirely the need for this reserve of public expenditure⁶⁹.

Our risk analysis seeks to identify the likelihood that the Scottish Executive could face an incidence of underperformance by Scottish Water that was within the control of management (and hence an interim determination would not be appropriate). It also seeks to identify the risk that an interim determination may be required.

In this draft determination we have made a number of assumptions. These have been set out in previous chapters. The most material of these assumptions are set out in Table 8.1. These are separated into factors that are within and those that are outside the control of management.

Table 8.1: Factors inside and outside management control

Within management control	Outside management control	
Operating costs: efficiency efficiency and incidence of new operating costs efficiency and incidence of additional baseline operating costs	Consumer prices index (CPI)	
Capital expenditure: efficiency scope of agreed programme	Construction outputs pricing index (COPI)	
	Exogenous shocks: change in outputs required changes in legislation other factors likely to trigger an interim determination	

We have measured exogenous shocks with reference to the frequency and outcome of interim determinations that have taken place south of the border. In many ways this is a conservative approach since it reflects the different statutory framework of England and Wales. At price reviews, Ofwat is likely to exclude uncertain, ill-defined or poorer value for money investment projects which the quality regulators or Government may have found to be desirable. These projects occasionally reappear as a result of interim determinations.

In Scotland, the new Commission is obligated to fund the objectives set by Scottish Ministers for the industry. In this draft determination we have funded all the 'essential' and 'desirable' objectives and it would, therefore, seem less likely that new investment outputs are identified during the regulatory control period.

Interim determinations are also frequently triggered south of the border because household customers switching to metered tariffs can have a significant impact on revenue. Such switching is unlikely in Scotland because of the structure of tariffs.

We have not included in our risk analysis the impact of the allowed for cost of capital or of interest rates. The

⁶⁷ In the Strategic Review of Charges 2002-06, we also conducted a risk analysis to support the advice on charges that we provided to the Scottish Ministers.

⁶⁸ For more information about the interim determination process see Chapter 6.

⁶⁹ For example: the funding for lead pipe removal.

financial impact of the allowed cost of capital has to be considered in conjunction with the regulatory capital value and the constraint that we have set charges such that Scottish Water's revenue in 2009-10 complies with all of the Ofwat cash-based financial ratios. Other inputs in the financial model compensate for any potential variance in the allowed rate of return.

Our initial intention was to include an analysis of the potential impact of interest rates. Our analysis showed, however, that this was not likely to be material. There are two reasons for this. First, we have linked our charge caps to the rate of retail price inflation (RPI). There is more variability in nominal interest rates than in real rates. The link between charge caps and the RPI insulates Scottish Water from nominal interest rate changes. Secondly, when we examined the variability in real interest rates over the past few years, our analysis suggested that there was approximately a 90% chance that the real interest rate would be within a half of one per cent of the estimate that we have used in this draft determination. The impact of such variability is not likely to exceed a million pounds in any one financial year. We do not consider that this is a material risk70.

We set out below what we consider to be reasonable ranges for the five areas that our risk analysis has sought to test, namely:

- operating costs;
- · capital costs;
- COPI inflation;
- · CPI inflation; and
- exogenous shocks.

It then describes the analysis that we have completed and presents the results. The full results of our risk analysis are set out in Appendix 14.

Risk profiles: Controllable costs

Operating costs

The risk profile that we have developed for the total allowed for level of operating costs has taken account of the scope for efficiency, increases in base costs and the required level of new operating costs.

Our analysis of the scope for efficiency assumes that the chance that Scottish Water would close less than 40% of the assessed efficiency gap in 2003-04 is 5%71. In its business plan, Scottish Water states that it expects to improve its operating expenditure efficiency significantly in 2004-05 and in 2005-06. Its forecasts suggest that it should close more than 50% of the assessed gap by 2005-06 from the 2003-04 baseline. Our assumption therefore allows, prudently, for the possibility of a deterioration in Scottish Water's performance from 2006-07. Conversely, we also assume that the chance that Scottish Water closes more than 90% of the gap is 5%. On this plausible assumption, Scottish Water would become an above average water and sewerage provider by 2009-10, if the companies in England and Wales do not outperform Ofwat's targets.

Table 8.2 and Figure 8.1 show the resulting risk profile.

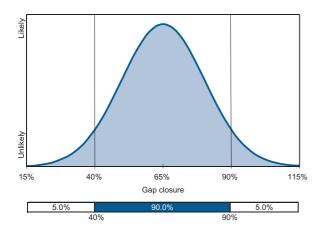
Table 8.2 Assumed mean and standard deviation of risk profile for closure of the operating expenditure efficiency gap

	Gap closure
Mean gap closure	65%
Standard deviation	15.2%
5% cumulative probability point	40%
95% cumulative probability point	90%

⁷⁰ Scottish Water borrows about £200 million each year – a half of one percent would be equivalent to £1 million a year.

⁷¹ This assumes that Scottish Water operates in a robust governance framework and benefits from appropriate incentives.

Figure 8.1: Risk profile for closure of the operating expenditure efficiency gap



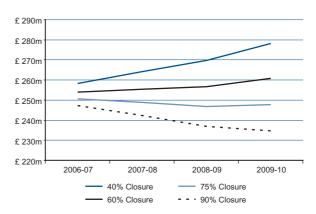
Our risk profile for closure of the operating expenditure efficiency gap determines the level of operating expenditure in each year. Table 8.3 illustrates the impact of different degrees of closure of the efficiency gap for operating expenditure for each year of the regulatory control period.

Table 8.3: Impact of closure of the operating expenditure efficiency gap on levels of operating expenditure

Gap closure	2006-07	2007-08	2008-09	2009-10
40%	£258.3m	£264.1m	£269.7m	£278.2m
60% (assumed in price limits)	£253.9m	£255.4m	£256.6m	£260.8m
65% (mean in risk analysis)	£252.8m	£253.2m	£253.3m	£256.5m
75%	£250.6m	£248.9m	£246.8m	£247.8m
90%	£247.3m	£242.3m	£237.0m	£234.7m

Figure 8.2 shows the same information as Table 8.2, in graphical form.

Figure 8.2: Impact of closure of the operating expenditure efficiency gap on levels of operating expenditure



We have assumed a 5% chance that increases in base operating expenditure and new operating expenditure could be less than 50% of the allowed level in each year. We have also assumed a 5% chance that these costs could be more than 50% above the level that we have allowed. This range is intended to reflect Scottish Water's plausible range of performance in controlling these additional costs.

Table 8.4 sets out the ranges for these costs that result from our assumptions.

Table 8.4: Assumed risk profile for increase to base operating expenditure plus new operating expenditure

	2006-07	2007-08	2008-09	2009-10
Allowed level of increase in base and new operating costs ⁷²	£10.4m	£12.8m	£14.8m	£19.9m
Mean change from allowed level	£0.0m	£0.0m	£0.0m	£0.0m
Standard deviation	£3.2m	£3.9m	£4.5m	£6.0m
5% cumulative probability point: change from allowed level	-£5.2m	-£6.4m	-£7.4m	-£9.9m
95% cumulative probability point: change from allowed level	+£5.2m	+£6.4m	+£7.4m	+£9.9m

⁷² The allowed for level of operating costs is after deducting efficiency savings.

Our risk analysis therefore combines the effects of uncertainty in the degree of closure of the efficiency gap with uncertainties in the levels of increases in base operating expenditure and of new operating expenditure.

Capital costs

The risk profile for capital expenditure reflects the scope to improve the efficiency and effectiveness of the delivery of the capital programme. It also reflects the extent to which Scottish Water could conceivably under-perform.

The size of the capital programme is uncertain at this stage. We have adopted the ranges for capital investment discussed in Chapter 14 of Volume 5. In setting charges, we adopted a figure for capital investment towards the upper end of this range and assumed that Scottish Water would deliver, but not out-perform, the minimum levels of improvement that we have set. We noted in that chapter that there was only a 2% chance that the investment programme should exceed the £2,100 million⁷³ that we assumed in setting charge caps.

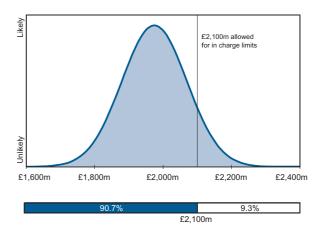
However, the effectiveness of Scottish Water's delivery of the programme is also uncertain and there is scope to out-perform or under-perform the levels of performance that we have adopted in setting charge caps. We need to take account of this additional uncertainty. Our analysis therefore assumes, prudently, that there is a 5% chance that Scottish Water would make no further progress from its expected level of efficiency in 2006-0774. This would imply a reduction in capital costs of only 8% over the entire investment programme. Conversely, we also assume that there is a 5% chance that Scottish Water could achieve very significant out-performance through strategic asset planning, asset rationalisation, a riskbased approach and other improvements. Our analysis assumes that there is a 5% chance that this could reduce total capital costs by more than 28%.

The combination of uncertainties in the size of the investment programme and the effectiveness of its delivery by Scottish Water results in the risk profile for capital expenditure as set out in Table 8.5 and illustrated in Figure 8.3.

Table 8.5: Assumed mean and standard deviation of risk profile for allowed capital expenditure⁷⁵

Mean	£1,974m
Standard deviation	£94.9m
5% cumulative probability point	£1,818m
95% cumulative probability point	£2,131m

Figure 8.3: Risk profile for allowed level of capital expenditure



As noted earlier, our charge caps assume a capital investment programme of £2,100 million. Even after allowing for the possibility of under-performance by Scottish Water, the probability of exceeding this allowance is still only 9%.

Risk Profiles - costs outside management control

COPI inflation

The risk profile that we have developed reflects the observed variability of COPI. We have compiled a distribution that reflects the changes in the level of COPI since the Bank of England became responsible for setting interest rates. We have therefore adopted the risk profile that is set out in Table 8.6 and illustrated in Figure 8.4.

We have looked carefully at the correlation between RPI and COPI. Our conclusion is that there is evidence that over a long time horizon (say 10-20 years) COPI and RPI will not differ greatly. There is, however, considerable

⁷³ Capital investment for the period 2006-07 to 2009-10, at 2003-04 prices, including the undelivered portion of Quality and Standards II.

We assume for the purposes of this risk analysis that Scottish Water's level of capital cost efficiency in 2006-07 will show an 8% improvement, compared with its cost base submission for this Strategic Review. This is consistent with Scottish Water's second draft business plan projections for 2006-07.

⁷⁵ Costs are in 2003-04 prices.

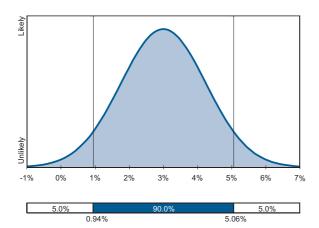
volatility in the short term and some volatility over the length of a regulatory control period.

It is therefore not straight forward to measure relative changes in COPI against RPI. We have made the conservative assumption that COPI may vary in line with observed trends since 1998, but that RPI will not change. This increases the risk that an interim determination will be required.

Table 8.6: Assumed mean and standard deviation of risk profile for annual change in the level of COPI

Mean	3.00%
Standard deviation	1.25%
5% cumulative probability point	0.94%
95% cumulative probability point	5.06%

Figure 8.4: Risk profile for assumed annual change in the level of COPI



It is important to note that changes in COPI would be likely to trigger an interim determination if the materiality threshold were to be breached. The impact of COPI is largely outside the control of management if the capital programme is being delivered on time. Delays to the capital programme could bring the impact of COPI within the factors considered (for regulatory purposes) to be within the control of management.

The risk profile that we have adopted covers a wide range of potential outcomes. This analysis should, therefore, have covered the plausible scope for uncertainty in this draft determination.

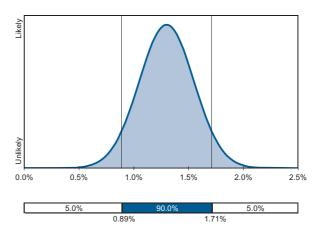
CPI inflation

The risk profile that we have developed for inflation reflects the observed variability of the CPI relative to RPI. We have compiled a distribution that reflects the changes in the level of CPI during the last seven years. We have therefore adopted the risk profile that is set out in Table 8.7 and illustrated in Figure 8.5.

Table 8.7: Assumed mean and standard deviation of risk profile for annual change in the level of CPI

Mean	1.30%
Standard deviation	0.25%
5% cumulative probability point	0.89%
95% cumulative probability point	1.71%

Figure 8.5:Risk profile for assumed annual change in the level of CPI



It is important to note that changes in CPI, as with COPI, would be likely to trigger an interim determination if the materiality threshold were to be breached. The impact of CPI is largely outside the control of management.

The risk profiles that we have adopted cover a wide range of potential outcomes. This analysis should, therefore, have covered the plausible scope for uncertainty in this draft determination.

Exogenous shocks

The risk profile that we have developed reflects the observed outcomes of interim determinations south of the border. We have adjusted these to take account of the different sizes of the companies that have received an adjustment to their price limits. In the period from 1998 to 2004, there were eight interim determinations for the water and sewerage companies. The probability of any company having an exogenous shock that is material enough to trigger an interim determination in any year was therefore 11.4%76. This corresponds to a probability of 38% for a given company in a regulatory control period77. We have assumed an annual 11.4% risk of exogenous shock in our analysis⁷⁸. We have adopted a uniform distribution for the size of this shock. This distribution has a minimum of £30 million and a maximum of £220 million. This reflects the observed range of cost impacts that Ofwat has allowed in interim determinations, adjusted for inflation and for Scottish Water's level of revenue. Our assumptions mean that there is an equal likelihood of a shock of, say £40 million as of, say, £100 million or £200 million.

Again, it is important to note that exogenous shocks would be likely to trigger an interim determination if the materiality threshold were to be breached.

The uniform risk profile that we have adopted covers a wide range of potential outcomes. This analysis should, therefore, have covered the plausible scope for uncertainty in this draft determination.

Analysis

We have used the profiles described above in a standard risk analysis software package⁷⁹. We assessed the profile combinations set out in Table 8.8.

Table 8.8: Profile combinations (management controlled) considered in the risk analysis

Risks considered	Dependency
Total allowed operating costs only	Assumes no risk in delivering the investment programme
Total allowed capital expenditure only	Assumes no risk in the level of operating costs incurred
Total allowed capital expenditure and total allowed operating costs	Dependent
Total allowed capital expenditure and total allowed operating costs	Independent

The choice of dependent or independent profiles reflects whether the risk of out or under-performance has a common cause (dependent) or alternatively that the factors are independent.

We have also looked separately at those factors that could trigger an interim determination (ie they are outside the control of management). We assessed the profile combinations set out in Table 8.9.

Table 8.9: Profile combinations (outside management control) considered in the risk analysis

Risks considered	Dependency
COPI	Assumes no risk in CPI or of exogenous shocks
CPI	Assumes no risk in COPI or of exogenous shocks
Exogenous shocks	Assumes no risk in CPI or COPI
COPI and exogenous shocks	Assumes no risk in CPI; independent
CPI and exogenous shocks	Assumes no risk in COPI; independent
CPI and COPI	Assumes no risk in exogenous shocks; independent
COPI, CPI and exogenous shocks	Dependent, exogenous shocks; independent
COPI, CPI and exogenous shocks	Independent

Results of our risk analysis (costs that are within the control of management)[®]

We have calculated the likelihood that Scottish Water should be in a position to deliver rebates to customers from the level of charge caps that we have set in this draft

This probability is calculated as 8 interim determinations / (10 companies x 7 years) = 11.4%

⁷⁷ This assumes four opportunities for an interim determination in a five year regulatory period. This is calculated as 1- ((1-0.114)^4) x 100%

The risk assessment for a given year assumes that no exogenous shocks have ocurred in previous years. However, if an interim determination were to be triggered in say 2007-08, then the risk of a further interim determination being required in 2008-09 or 2009-10 would be negligible.

⁷⁹ We have used the Palisade Corporation's @RISK Risk analysis and simulation add-in for Microsoft ® Excel. Version 4.5.

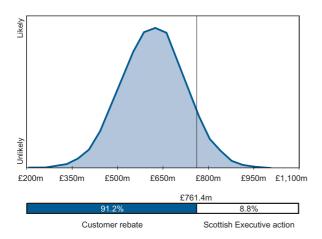
Our analysis in Volume 5 suggested that a capital programme of £2.1 billion post-efficiency was reasonable. The risk analysis assumes that the capital programme is £2.1 billion and that Scottish Water operates in an effective regulatory framework with appropriate incentives to perform.

determination. The converse is the potential requirement for the Scottish Executive to decide how to address under-performance relative to the draft determination.

We set out the results of combining the operating and capital cost uncertainties (the last item in Table 8.8) in Figure 8.6. This shows the expected position in 2009-10. The results for the years 2006-07 to 2008-09 are set out in Appendix 14. Figure 8.6 shows that the most likely outcome is that Scottish Water would require a cumulative total of £618 million of new debt by the end of 2009-10. This outcome would be consistent with rebates to customers during the regulatory control period, since the allowance in charge limits for new debt is £761 million (assuming that Scottish Water does not out-perform our assumptions). The analysis also indicates that the risk of the Scottish Executive having to address a failure to perform at least in line with the draft determination is low, at less than 9%. This is a very low risk given that our modelled scenarios included significant underperformance in operating and capital costs.

In our view this highlights just how stable and predictable the water industry is. As we will see when we look at the impact of exogenous shocks and inflation [from which Scottish Water is fully protected because of the interim determination process and our ring-fenced debt buffer], the main financial risks are borne by customers.

Figure 8.6: Impact of operating and capital expenditure risks and inflation risks (independently) on the likelihood of customer rebates or of Scottish Executive action



In our methodology consultation⁸¹, we said that we intended to extend our risk analysis to include the impact on Scottish Water's compliance with the financial ratios. This is shown in Table 8.10. The results show small risks of breaching target ratios over the regulatory control period.

Table 8.10: Scottish Water's compliance with targeted financial ratios

	Probability of non-compliance						
	Target	2006-07	2007-08	2008-09	2009-10		
Cash interest cover (funds from operations/gross interest)	Greater than 2.25	<0.1%	<0.1%	<0.1%	<0.1%		
Adjusted cash interest cover (funds from operations less capital charges/gross interest)	Greater than 1.20	<0.1%	<0.1%	<0.1%	<0.1%		
Funds from operations/debt	Greater than 13%	<0.1%	<0.1%	<0.1%	8.7%		
Retained cash flow/debt	Greater than 7%	<0.1%	<0.1%	<0.1%	<0.1%		
Gearing (net debt/ regulatory capital value)	Below 65%	>99.9%	1.9%	0.1%	0.2%		

Results of our risk analysis (costs that are outside the control of management)

We have calculated the likelihood that externally driven costs (inflation or an exogenous shock) could be sufficiently material to warrant an interim determination.

First we applied a pessimistic assumption that the capital programme would be equal to the higher estimate that we have used in setting prices (£2.1 billion at 2003-04 prices). We set out the results of combining uncertainties in CPI, COPI and our assumed risk profile of exogenous⁸² shocks (the last combination in Table 8.9) in Figure 8.7. This shows the expected position in 2009-10. The results for 2006-07 to 2008-09 are set out in Appendix 14 Figure 8.7 shows that under this pessimistic scenario, the chance of Scottish Water incurring unforeseen expenses that may lead to interim determination by 2009-10 is around 41%.

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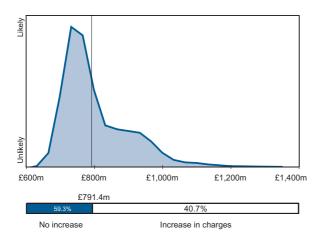
⁸² These shocks (scaled to the size of Scottish Water) range from £30 million to £220 million.

It is important to put this risk in proper perspective. It says that if:

- the capital programme outturns at £2.1 billion;
- Scottish Water experiences exogenous shocks similar to those that have happened south of the border (a conservative assumption); and
- there are adverse swings in CPI and COPI relative to RPI.

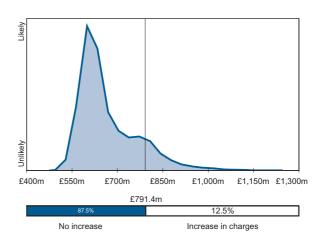
then there is still around a 59% chance that an interim determination would not be required. Again this would seem to emphasise the predictability of the water and sewerage industry.

Figure 8.7: Impact of factors outside management control on the likelihood of breaching new borrowing allowed in price limits – high capital investment programme scenario



Second, we adopted a more likely scenario for the size of the capital investment programme, taking the midpoint of the cost range that we identified through our detailed analysis (see Chapter 14 of Volume 5). Figure 8.8 shows that in this scenario, the chances of Scottish Water incurring unexpected expenses that are material enough to trigger an interim determination of charges by 2009-10 is less than 13%. This would require borrowing to exceed around £791 million.

Figure 8.8: Impact of factors outside management control on the likelihood of breaching new borrowing allowed in charge limits – central capital investment programme scenario



In both scenarios, our analysis assumes that, except for the effects of inflation and exogenous shock, Scottish Water performs in line with the regulatory contract for operating and capital cost efficiency.

This result should reassure customers that we have set charges at a reasonable level. While we cannot rule out the possibility that an interim determination will be required or that Scottish Water could under-perform the tight budget constraints set out in this draft determination, there is a clear balance of probability that this should not happen – even if Scottish Water faces shocks of comparable size to those observed south of the border.

Indeed our analysis shows that there may have been scope to set slightly lower charges and maintain the levels of capital and operating expenditure set in this draft determination.

Conclusions

We believe that our risk analysis covers the plausible degree of uncertainty in the principal factors that affect Scottish Water's costs over the period 2006 to 2010. Our analysis allows, prudently, for the possibility of significant under-performance of the determination of charges by Scottish Water. It analyses a range of outcomes,

including an outcome where Scottish Water's operating cost efficiency deteriorates in the period after 2006. The best performance that we have modelled is consistent with a modestly above average level of efficiency for the companies south of the border.

The results of our analysis indicate that there is a high likelihood that customers can expect Scottish Water to be in a position to forego a portion of its allowed charge caps during the 2006-10 regulatory control period. The chances of the Scottish Executive having to deal with a situation where Scottish Water under-performs the draft determination of charges is less than 9%. Our results also show that key financial indicators used by Ofwat remain within the limits consistent with financial sustainability.

Our analysis also shows that the chances of Scottish Water incurring expenses that could trigger an interim determination is just over 40%, even if our highest estimated value for the capital programme is adopted, there are adverse variances in inflation and the corporation faces exogenous shocks. If the average forecast value for the capital programme is used, there is less than a 15% chance, on the same basis, that Scottish Water will incur expenses (outside management control) that may trigger an interim determination.

Section 3: Wholesale and retail revenue Chapter 9: Calculation of wholesale revenue

Introduction

In this chapter we explain how we have calculated the wholesale revenue cap that we have set Scottish Water. This wholesale revenue cap includes both the revenue from the retail charge caps set for household customers and the purely wholesale revenue that will be paid to Scottish Water by its retail subsidiary.

We first set the revenue cap for the Scottish water industry as a whole. We explained the approach we used and our conclusions in Chapters 3 and 4. The next step was to use the accounting method to calculate the costs that Scottish Water's retail subsidiary would incur in serving non-household customers. We wanted to use the comparator method to assess the reasonableness of this level of costs, but unfortunately insufficient information was available to allow us to conduct a robust analysis.

Scottish Water's retail subsidiary is likely to incur additional costs as a result of it becoming a separate licensed business. These costs are likely to include carrying out new activities, or existing activities under different operating conditions. For example, Scottish Water's retail subsidiary will have higher IT costs, customer retention costs and an additional cost of capital.

Conversely, the present vertically integrated structure of Scottish Water is likely to mask many activities which neither the retail nor the wholesale business will value when one of the two companies (trading at an arm's length relationship with each other) has to meet the costs. We fully expect separation to generate efficiencies for Scottish Water's retail subsidiary. Potential savings could be made in areas such as reducing customer handling costs, electronic billing and payment, and aggregating bills.

Similarly, we expect that the wholesale business will also be able to make additional savings. These savings are likely to arise because of the improved understanding of costs that will result from the legal separation of the retail activities. We are confident that the scope for potential savings will more than offset the additional costs from separation in the long run.

The revenue cap for Scottish Water

Table 9.1 shows Scottish Water's total revenue requirements, as generated by the financial model.

Table 9.1: Annual Scottish Water revenue requirement (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Revenue requirement	£982.66m	£1,005.54m	£1,009.18m	£1,018.24m

Scottish Water's retail subsidiary will receive all of the revenue allowed by the eight tariff baskets that cover non-household charges – less the small amount that is expected to come from household metered customers. This is set out in Table 9.2.

Table 9.2: Scottish Water's retail subsidiary revenue (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Revenue requirement	£982.66m	£1,005.54m	£1,009.18m	£1,018.24m
Subtract household unmeasured	£641.86m	£661.02m	£667.34m	£673.66m
Subtract household metered customers	£0.18m	£0.18m	£0.18m	£0.18m
Subtract secondary revenue	£13.89m	£14.24m	£14.59m	£14.96m
Scottish Water's retail subsidiary	£326.73m	£330.10m	£327.07m	£329.44m

Scottish Water's retail subsidiary will then pay Scottish Water for the wholesale service provided. This will represent its cost of sales. The gross profit for Scottish Water's retail subsidiary will have to cover operating costs, depreciation and its cost of capital.

Figure 9.1 sets out the process we have used to develop separate wholesale and retail revenue limits.

Process of calculating wholesale revenue Scottish Water Retail Set charge caps for Scottish Water Verify non-household retail Verify household retail Verify wholesale activities activities from Scottish Water activities from Scottish from Scottish Water M M table returns for 2003-04 table returns for 2003-04 Water M table returns for 2003-04 Use accounting approach to Use accounting approach Use accounting approach identify non-household retail to identify household retail to identify wholesale operating costs from 2003operating costs from 2003operating costs from 2003-04 regulatory accounts 04 regulatory accounts 04 regulatory accounts Create non-household retail Create household retail Create wholesale operating operating cost statement for cost statement for 2003-04 operating cost statement 2003-04 for 2003-04 Apportion operating cost line of financial model revenue calculation sheet Allocate identifiable additional operating costs and efficiencies within Analyse other lines of model between wholesale financial model revenue and retail calculation sheet between wholesale and retail Using the comparator method benchmark wholesale and retail costs against other utility companies as a reasonableness check

Figure 9.1: How we calculated wholesale and retail revenue limits

Verifying the wholesale and retail activities

The first stage of the process was to define the wholesale and retail activities and their costs. We required more information than had previously been reported by Scottish Water in order to complete this analysis.

Scottish Water completes an Annual Return which includes a number of reporting tables that provide information about the different elements of Scottish Water's business. Previously these tables (known as E

tables) only reported activity-based information at a very high level. They did not record the information necessary either to enable us to separate wholesale and retail costs or for Scottish Water to comply with our regulatory accounting rules.

We therefore worked with Scottish Water to develop a new set of tables (the M tables). These tables require Scottish Water to provide much more detailed information about activities, costs and assets. These tables capture the information required under Regulatory Accounting Rule 483. Each activity is then split according to whether it is core or non-core; wholesale or retail; and retail non-

⁸³ Regulatory accounts are discussed in detail in Volume 4.

household or retail household. In developing the M tables, we were keen to reduce the regulatory reporting burden on Scottish Water by drawing information, as far as possible, from Scottish Water's own Activity-Based Management System (ABM).

We commissioned Ernst & Young LLP⁸⁴ to carry out an analysis of individual activities. These activities were categorised according to where they should appear in the M tables, whether they are potentially a shared service, and which accounting rules should apply. Scottish Water used this information to help it to complete the M tables.

Identifying costs using the regulatory accounts

As described in Volume 4, regulatory accounts provide the level of detail, clarity and transparency necessary to identify individual activity costs.

Costs can either be allocated to activities directly using financial drivers or, for shared services, apportioned based on non-financial drivers. For example, where employees divide their time between retail and wholesale activities they should complete timesheets to indicate where their time has been spent. This allows employment costs to be allocated properly.

In many instances, Scottish Water can either allocate costs directly or use a non-financial driver to apportion them. Some costs are less straightforward to allocate appropriately. For example, central support costs can only be allocated using a degree of judgement. Scottish Water believes that costs allocated on such a basis comprise a very small proportion of total operating expenditure.

Scottish Water submitted regulatory accounts for 2003-04. These accounts are fully reconcilable to the audited historical cost financial statements.

We carried out a detailed analysis of Scottish Water's 2003-04 regulatory accounts and the supporting information. We then worked with Scottish Water to produce a final agreed set of regulatory accounts.

Understanding the costs of the new retail subsidiary

We have analysed the costs that the new retail subsidiary will incur in the following five areas:

- · operating costs;
- · metering;
- capital expenditure and depreciation;
- · financing costs; and
- tax.

In our analysis, we sought to identify the incidence of activities and their costs to ensure that we struck an appropriate balance between the wholesale core business and the new retail subsidiary. We also identified the extent to which the costs incurred are higher as a result of the establishment of the retail subsidiary.

Operating costs

We have reviewed the detailed activity analysis within the regulatory accounts. In order to understand the ongoing level of operating costs, we removed all exceptional items. Our analysis of operating costs by functional area is set out in Table 9.3.

Table 9.3: Analysis of 2003-04 operating costs by function

Based on 2003-04 M tables	Retail household	Retail non- household	Wholesale	Total core
Water service (excluding exceptional items)	£20.76m	£11.97m	£133.99m	£166.72m
Waste water (excluding exceptional items)	£22.24m	£12.85m	£94.64m	£129.74m
Total (excluding exceptional items)	£43.00m	£24.83m	£228.63m	£296.46m
Percentages	14.51%	8.38%	77.12%	100%

Metering

We looked in detail at the costs of metering. The capital costs of meters are met by the wholesale business. It is important that a retail supplier requests the appropriate

⁸⁴ Ernst & Young LLP, 'Analysis of business activity in Scottish Water', December 2004.

level and type of metering. We can help to make sure that this happens by charging the retailer an annualised amount equal to the cost of installing and maintaining meters. In effect, the retailer is leasing the meter infrastructure from Scottish Water. These costs need to be added to the operating costs of the new retailer. This reduces costs for the wholesaler by an equivalent amount and there is therefore no net impact on customers.

We have estimated the annualised cost of metering in 2006-07 at £0.47 million (2003-04 prices). This rises to £0.51 million (2003-04 prices) by 2009-10. This is based on the expected number of water and waste water meters in 2006-07. This takes full account of the expected cleansing of the customer base that Scottish Water intends to undertake before 2006-07⁸⁵.

We have based our cost per meter on Ofwat's assessment of the annualised cost of a household meter, including installation, of £4 to £686. Non-household customers will on average require larger meters and we have increased Ofwat's £4 to £6 assessment to £7 per meter to reflect this. We then assume that this splits evenly between water and waste water. We have made only a small increase in meter costs since 79% of non-household customers in Scotland have water usage similar to households and more than 95% of non-household metered customers have a meter with a 25mm or lower capacity⁸⁷.

In its second draft business plan, Scottish Water proposes full metering of all business customers by 2010. We have therefore increased the overall annual cost to reflect this.

Capital expenditure and depreciation

In the second draft business plan for the retail business⁸⁸, Scottish Water estimated that fixed assets with a net book value of £2.00 million would be transferred to the retail business. We have assumed that these assets have a six-year average life and that they are, in line with Scottish Water's other non-infrastructure assets, half way through their useful lives. This implies a depreciation

charge of £0.67 million per year on base assets.

Financing costs

Scottish Water's retail subsidiary will have an increased cost of capital. This is for two reasons:

- In a competitive market, Scottish Water's retail subsidiary would enjoy an unfair advantage relative to new market entrants if it could access capital at public sector rates.
- Retail activity in a competitive market is an intrinsically more risky activity than for a regulated natural monopoly.

We commissioned Ernst & Young LLP to advise on an appropriate cost of capital for the retail subsidiary of Scottish Water⁸⁹. They advised that a reasonable weighted average cost of capital (WACC) for the new retail business is between 8.2% and 9.4% nominal pretax. The cost of equity is assumed to be 12% and the cost of debt is assumed to be 6%. This compares with our hybrid WACC of 4.12% for Scottish Water's core business.

Several factors impact on the cost of capital that we should allow the retail business:

- Changes in the revenue base: When the market opens to competition, Scottish Water will have 100% of the available non-household customers. It will, therefore, lose customers over time. As a result it will need to develop a cost structure that is sufficiently flexible to adapt to the level of revenue it retains.
- A very thin margin: The supply of utility services is a very low margin business. There is only a small opportunity for adding value in the supply of the basic service.
- Capital structure: A low margin business that faces the need to adapt its cost structure to an almost

⁸⁵ See Chapter 12 for details.

⁸⁶ Ofwat, RD 30/03, 'Measured/unmeasured tariff differential', annex page 10.

⁸⁷ Scottish Executive, 'Paying for water services 2006-2010', Analysis of whether there are significant cross-subsidies between the different customer groups served by Scottish Water, Annex 2, Analysis of the WIC22 non-household revenue database, Stone & Webster Consultants Ltd, February 2005.

Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan' (April 2005).

⁸⁹ Ernst & Young LLP, 'Cost of capital report for the Water Industry Commissioner for Scotland' (May 2005), provided in Appendix 8.

certain future reduction in revenue cannot afford to be highly indebted. It will therefore need to be funded mainly through equity.

The return on equity should take account of:

- the market return on equity; and
- a premium to take account of the new market, the relative size of the retail subsidiary of Scottish Water, its likely loss of customers, and a significant need for working capital.

We have estimated the cash allowed return of the retail subsidiary of Scottish Water as follows:

- In the second draft business plan for the retail business, it was estimated that fixed assets with a net book value of £2.00 million would be transferred to the retail business. We have assumed that these assets are entirely equity-financed.
- We have assumed starting working capital transferred to the retail subsidiary of £88.20 million. This is taken from Scottish Water's retail business plan.
- The bank facility for working capital is assumed to cover 80% of working capital requirements, with the remaining 20% to be financed from equity in the retail subsidiary.
- The bank facility is assumed to be a 365-day 'revolver'90, with a charge of LIBOR91 + 1% (LIBOR rate of 5%).

This analysis gives a cash allowed return on assets transferred to the retail subsidiary as set out in Table 9.4.

Table 9.4: Cash allowed return for the retail subsidiary (2005-06 prices)

Item	Amount	Rate of return	Cash allowed return
Depreciated fixed assets	£2.00m	12%	£0.24m
Working capital (debt funded)	£70.56m	6%	£4.23m
Working capital (equity funded)	£17.64m	12%	£2.12
Total	£90.20m		£6.59m

The cash cost of capital of Scottish Water's retail subsidiary is £6.59 million. The cost of capital if these activities had been retained within the core business and funded by debt would have been £4.15 million. The extra cost that has to be met by the retail subsidiary is therefore £2.44 million.

Tax

The new retail subsidiary of Scottish Water is likely to have to pay corporation tax. We have estimated the tax liability by using the following simplifying assumptions:

- that the capital allowances available to the retail subsidiary for tax purposes are broadly equal to the depreciation charge;
- that the retail subsidiary generates a post-tax, postdividend profit of £0.00 million; and
- that the tax rate is 30%.

The tax payable would be approximately £1.27 million in 2006-07. By 2009-10, this will have risen to approximately £1.73 million. This is an increase of approximately £0.50 million from what would have been payable in each year if the subsidiary had not been established.

Other new costs claimed by Scottish Water for its new retail subsidiary

We believe that there will be some additional costs that Scottish Water's retail subsidiary will incur when it begins to operate as a separate entity.

In its second draft business plan for the retail business, Scottish Water set out its views on the extra costs that it is likely to incur. These are shown in Tables 9.5 and 9.692.93.

⁹⁰ A 'revolver' is a borrowing arrangement that provides the borrower with a degree of flexibility by allowing the borrower to draw and repay different amounts for different periods throughout the life of the credit facility. There is no requirement for a revolver to be fully drawn.

⁹¹ LIBOR – London Inter Bank Offered Rate: the rate at which banks lend to one another.

¹² Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', pages 29-33 (April 2005).

⁹³ Scottish Water, 'Strategic Review of Charges: Second draft business plan' p. B7-14 (April 2005).

Table 9.5: Set-up costs claimed by Scottish Water for its new retail subsidiary (2003-04 price base)

	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Restructuring	£0.00m	£0.00m	£0.00m	£0.91m	£0.91m	£1.82m
Internal preparation costs	£0.73m	£0.18m	£0.00m	£0.00m	£0.00m	£0.91m
IT separation costs	£0.00m	£7.26m	£0.00m	£0.00m	£0.00m	£7.26m
Retail contact management system	£0.00m	£2.18 m	£0.00m	£0.00m	£0.00m	£2.18m
Additional capital expenditure to maintain new systems	£0.00m	£0.00m	£0.18m	£0.18m	£0.18m	£0.54m
Contribution to developing market structures	£0.00m	£0.09m	£0.09m	£0.00m	£0.00m	£0.18m
Total set-up costs within licensed business	£0.73m	£9.71m	£0.27 m	£1.09m	£1.09m	£12.89m

Table 9.6: New annual costs for the retail subsidiary of Scottish Water (assuming 100% market share) (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Interface with market mechanisms	£0.00m	£0.00m	£0.09m	£0.09m
Payment for development and operation of market mechanisms	£0.00m	£0.00m	£4.16m	£4.16m
Enhanced customer service	£0.47m	£0.47m	£0.47m	£0.47m
Additional customer management effort	£0.19m	£0.28m	£0.28m	£0.28m
Additional costs in retail contact management centre due to separation	£0.28m	£0.47m	£0.47m	£0.47m
Regulation and licensing, additional management structures and relations with the core business	£0.47m	£0.47m	£0.57m	£0.57m
Additional marketing effort	£0.09m	£0.19m	£0.19m	£0.19m
Contribution to Commission's costs	£0.19m	£0.19m	£0.19m	£0.19m
Operating costs for newly metered customers	£0.09m	£0.09m	£0.19m	£0.19m
New costs from IT separation	£0.00m	£0.09m	£0.00m	£0.09m
Total recurring costs (per year)	£1.80m	£2.27m	£6.62m	£6.71m

We will consider each of these claims in turn.

Analysis of set-up costs

Restructuring costs

Scottish Water's second draft business plan for the licensed business earmarks funds to modify the business in the light of the level and nature of competition⁹⁴.

We recognise that businesses have to adapt to changing conditions in their market place. We also agree that Scottish Water's retail subsidiary will have to contend with a declining number of customers and will need to ensure that its cost base is in line with its share of the retail market.

It is important that decisions about restructuring benefit the business. There is no point in incurring restructuring costs if these do not lower the costs of the business. Otherwise charges would have to increase and a greater number of customers would be likely to switch supplier.

It would not be appropriate for us to allow restructuring costs in price limits for a retail business that will be subject to competition and which benefits from a commercial rate of return.

Scottish Water claimed £0.91 million in both 2008-09 and 2009-10. We are not persuaded by its argument and have disallowed this claim.

⁹⁴ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 34, (April 2005).

Internal preparation costs

Scottish Water believes that the retail arm will incur additional internal preparation costs as a result of having to:

- establish management and reporting structures;
- develop contracts with business customers and Scottish Water;
- establish legal and financial structures; and
- communicate with staff and customers⁹⁵.

We note that Scottish Water expects to have incurred almost all of the costs claimed before the start of the 2006-10 regulatory control period. Scottish Water has claimed £0.73 million for 2005-06 and £0.18 million for 2006-07. This draft determination takes full account of Scottish Water's forecast total operating and capital expenditure costs in 2005-06 (and therefore the £0.73 million). We are prepared to allow the claim for 2006-07.

IT separation costs

The business plan has allocated these costs to cover the full separation of billing and customer contact management systems, the transfer of the current billing system and the addition of extra functionality⁹⁶.

We have allowed this claim but have reduced it to reflect the scope for efficiency that we found in the capital programme. Scottish Water has claimed £7.25 million for its retail subsidiary. We have allowed this £7.25 million pre-efficiency.

Retail contact management system

Scottish Water believes that additional capital expenditure is necessary to cover the separation of underlying IT systems to produce a copy of the contact management system and database for business retail activities⁹⁷.

We have not allowed this claim because we believe that the process of separation could be carried out within the IT separation costs.

Additional capital expenditure to maintain new systems

The draft business plan explains that this expenditure is required to cover the additional cost of maintaining new retail operating systems⁹⁸.

We have allowed this claim but have reduced it to reflect the scope for efficiency that we found in the capital programme. Scottish Water has claimed £0.18 million from 2007-08 onwards for its retail subsidiary. We have therefore allowed £0.18 million pre-efficiency.

Contribution to developing market structures

Scottish Water has identified additional costs to cover the retail arm's contribution to the development of market mechanisms⁹⁹.

There is still some uncertainty surrounding who will be responsible for paying the capital costs of developing new systems that will be used by more than one retailer. We have assumed that these will fall entirely on Scottish Water's wholesale business. We have therefore made no allowance for such costs in the retail business.

Contingency

For each one of Scottish Water's assessed additional capital costs we have either allowed or disallowed the item. We also consider that it is appropriate to make an additional £130,000 available to the retail business in each year as a contingency against any costs that are currently unidentified in relation to setting up a retail subsidiary.

Conclusions on new set-up costs claimed for the retail subsidiary of Scottish Water

We summarise the results of our analysis of Scottish Water's claims for set-up costs in Table 9.7. We have reduced each of the costs we have identified by 17% – the average scope for efficiency in capital expenditure that we have identified 100.

⁹⁵ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan' page 34, (April 2005).

⁹⁶ Ibid.

⁹⁷ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 35, (April 2005).

⁹⁸ Ibio

⁹⁹ Ibio

¹⁰⁰ The scope for capital expenditure efficiency is described in more detail in Volume 5, Chapter 14.

Table 9.7: Set-up costs allowed in this draft determination for the new retail subsidiary (2003-04 price base)

	2006-07	2007-08	2008-09	2009-10	Total
Restructuring	£0.00m	£0.00m	£0.00m	£0.00m	£0.00m
Internal preparation costs	£0.14m	£0.00m	£0.00m	£0.00m	£0.14m
IT separation costs	£6.02m	£0.00m	£0.00m	£0.00m	£6.02m
Retail contact management system	£0.00m	£0.00m	£0.00m	£0.00m	£0.00m
Additional capital expenditure to maintain new systems	£0.00m	£0.15m	£0.15m	£0.15m	£0.45m
Contribution to developing market structures	£0.00m	£0.00m	£0.00m	£0.00m	£0.00m
Contingency	£0.10m	£0.10m	£0.10m	£0.10m	£0.42m
Total set-up costs within licensed business	£6.26m	£0.25m	£0.25m	£0.25m	£7.02m

We assume that all of the asset additions are financed from equity and therefore require a 12% rate of return. We also assume that all new assets are depreciated over five years.

Analysis of claimed extra annual operating costs

We will now consider each of the annual operating costs in turn

Interface with market mechanisms

The retail subsidiary's second draft business plan explains that these costs will be incurred in managing the retail business's interface with the company developing and operating market mechanisms¹⁰¹.

We believe that there will be a small cost (£0.20 million) associated with this process and have allowed the claim.

Payment for development and operation of market mechanisms

These costs have been included to cover the retail subsidiary's contribution to developing and operating the market¹⁰².

The simple customer registration system that we envisage for the retail market should have operating costs (including depreciation) that are no higher than £2.50 million per year. We have allowed this amount in response to Scottish Water's claim of £4.16 million for both 2008-09 and 2009-10.

Enhanced customer service

The second draft business plan states that these costs are necessary in order to enhance customer service so as not to lose market share in a competitive environment¹⁰³.

We are not persuaded that the retail subsidiary should incur extra costs in managing its non-household customers as a result of the introduction of the competition framework. Extra costs would tend to increase customers' bills and no evidence has been presented to show that customers are willing to pay more for an enhanced retail service.

It should be for the market to determine whether an enhanced level of retail service is appropriate.

Scottish Water claimed £0.47 million per year for providing an enhanced customer service. We have not accepted this claim.

Additional customer management effort

Due to separation, Scottish Water expects to incur higher unit costs in serving customers in the following functions:

¹⁰¹ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 29, (April 2005).

¹⁰² Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 30, (April 2005).

¹⁰³ Ibid.

- key customer management/strategic liaison;
- business and community relations;
- marketing;
- customer operations; and
- customer support group¹⁰⁴.

We are again not persuaded that the retail subsidiary should incur extra costs in managing its non-household customers as a result of the introduction of the competition framework. In our view, it is for management to ensure that its cost base is sufficiently flexible to respond effectively to the loss or regaining of customers in a competitive market. We have therefore disallowed this claim.

Additional costs in retail contact management centre due to separation

These costs cover services that would previously have been carried out by the household contacts team. These include handling operational business contacts and 'out of hours' emergency situations. In addition, these costs cover the loss of scale and scope economies in the customer management centre¹⁰⁵.

We accept that there may be some additional costs incurred in the contact management centre as a result of the separation. However, we believe that this is within the control of management to address. We have therefore allowed £0.30 million in the first year and reduced this cost by £0.05 million in each subsequent year of the regulatory control period.

Regulation and licensing, additional management structures and relations with the core business

The business plan details these costs as covering:

- a separate board and management team;
- monitoring compliance with the separation regime;

- additional reporting requirements to the Commission;
 and
- contractual relations with the wholesale business¹⁰⁶.

We recognise that some extra costs may be incurred. We have assumed that a team of three people would be appointed to deal with these issues. Our allowance is £0.2 million for each year of the regulatory control period.

Additional marketing effort

The second draft business plan recognises the additional marketing pressures that Scottish Water's retail subsidiary will face in a competitive market. There will be new pressures to retain and win back customers¹⁰⁷.

We recognise that Scottish Water's retail subsidiary will have to increase its marketing activity and have accepted this claim.

Contribution to Commission's costs

The retail subsidiary has included these costs to cover the new Water Industry Commission's costs in licensing the market 108.

The Scottish Executive has made it clear that the costs of the Commission in developing the licensing regime will be covered by grant-in-aid until the opening of the market in April 2008. We have disallowed the claim made by Scottish Water for both 2006-07 and 2007-08. We accept the claim in full from 2008-09.

Operating costs for newly metered customers

It is the Scottish Water retail subsidiary's intention to increase the number of metered customers. This additional operating expenditure recognises the fact that metered customers are on average more expensive to serve than unmetered customers¹⁰⁹. Scottish Water has said that it does not intend to bill these newly metered customers on a measured basis during this regulatory control period. However, some extra costs may be

¹⁰⁵ Ibid.

¹⁰⁶ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 31, (April 2005).

¹⁰⁷ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 30, (April 2005).

¹⁰⁸ Scottish Water, 'Strategic Review of Charges: Licensed retail business: second draft business plan', page 31, (April 2005).

¹⁰⁹ Ibid.

incurred in communicating this policy to the whole non-household customer base.

This claim is broadly consistent with the Minister's statement on the principles of charging¹¹⁰. We have therefore allowed this claim.

New costs from IT separation

Scottish Water believes that the retail arm will incur oneoff operational costs as a result of IT separation¹¹¹.

We do not accept that additional costs should arise due to the separation of the IT system and consider that it is fully within the control of management to ensure that they do not arise.

Conclusions on new operating costs claimed for the retail subsidiary of Scottish Water

We summarise the results of our analysis of claimed new operating costs in Table 9.8.

Table 9.8: New annual costs for the retail subsidiary of Scottish Water (assuming 100% market share) (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Interface with market mechanisms	£0.00m	£0.00m	£0.10m	£0.10m
Payment for development and operation of market mechanisms	£0.00m	£0.00m	£2.50m	£2.50m
Enhanced customer service	£0.00m	£0.00m	£0.00m	£0.00m
Additional customer management effort	£0.00m	£0.00m	£0.00m	£0.00m
Additional costs in retail contact management centre due to separation	£0.30m	£0.25m	£0.20m	£0.15m
Regulation and licensing, additional management structures and relations with the core business	£0.20m	£0.20m	£0.20m	£0.20m
Additional marketing effort	£0.09m	£0.19m	£0.19m	£0.19m
Contribution to Commission's costs	£0.00m	£0.00m	£0.19m	£0.19m
Operating costs for newly metered customers	£0.10m	£0.10m	£0.20m	£0.20m
New costs from IT separation	£0.00m	£0.00m	£0.00m	£0.00m
Total recurring costs (per year)	£0.69m	£0.74m	£3.58m	£3.53m

We then apply the average efficiency on base operating costs (for water and sewerage) to each of the costs in Table 9.9.

¹¹⁰ See Appendix 4.

¹¹¹ Scottish Water 'Strategic Review of Charges: Licensed retail business: second draft business plan, page 31, (April 2005).

Additional scope for efficiency in the retail business

We believe that there should be improved scope for efficiency in the retail business as a result of the separation of this activity and the threat of competition. We have firstly assumed that the retail business has the same efficiency targets applied to it as we apply to the whole of Scottish Water combined. Efficiency targets are therefore applied for both capital expenditure costs and operating expenditure costs.

The calculation of the allowed for level of operating cost for the retail subsidiary of Scottish Water is set out in Tables 9.9 and 9.10.

Table 9.10 sets out the total operating costs (preefficiency, nominal terms) of Scottish Water's retail subsidiary. It assumes that the retail subsidiary of Scottish Water will retain a 100% market share.

Table 9.9: Total operating costs of retail activity (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Base operating cost	£26.19m	£26.72m	£27.25m	£27.80m
New operating costs	+£0.73m	+£0.80m	+£3.93m	+£3.95m
Pro-rata share of efficiency targets	-£4.81m	-£5.00m	-£5.77m	-£5.98m
Allowed for level of operating costs, before additional efficiencies	£22.11m	£22.52m	£25.41m	£25.77m

We believe that separating retail and wholesale activities will create additional efficiencies in both the retail and wholesale businesses. We believe that management will be under pressure to keep cost increases in line with inflation. We have taken account of this in our additional efficiency assumptions. These are set out in Table 9.10.

Table 9.10: Additional scope for efficiency within the retail market (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Additional required efficiency	£0.00m	£0.00m	£2.45m	£2.35m

The retail gross margin required is set out in Table 9.11.

the retail business each year is 27% of total revenue.

Table 9.11: Retail gross margin 2006-10

	2006-07	2007-08	2008-09	2009-10
Operating cost	£22.11m	£22.51m	£22.96m	£23.42m
Meter leasing costs	£0.49m	£0.52m	£0.55m	£0.57m
Depreciation/asset costs	£1.66m	£2.96m	£3.31m	£2.76m
Financing costs ¹¹²	£7.18m	£7.89m	£7.91m	£7.78m
Tax	£1.27m	£1.61m	£1.70m	£1.73m
Total gross margin	£32.72m	£35.49m	£36.43m	£36.27m

Impact of the set-up of the retail business for the core wholesale activity

We believe that there will be some additional costs, before we take account of any additional scope for improving efficiency, which the core business will incur when it begins to operate without a retail function in respect of non-household customers.

In its second draft business plan, Scottish Water set out its views on the additional costs that it is likely to incur. These are shown in Tables 9.12 and 9.13.

112 We have assumed that all working capital is funded 80% from equity and 20% from debt. We assume that the working capital requirement for

Table 9.12: Claimed capital costs for core business resulting from the new framework for competition (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10	Total
Wholesale billing system	£1.60m	£0.00m	£0.00m	£0.00m	£1.60m
Additional capital expenditure to maintain new systems	£0.00m	£0.30m	£0.30m	£0.30m	£0.90m
Internal preparation costs	£1.10m	£1.10m	£0.00m	£0.00m	£2.20m
Contribution to developing market mechanisms	£0.10m	£0.10m	£0.00m	£0.00m	£0.20m
Contact management centre enhancements	£0.00m	£1.00m	£0.00m	£0.00m	£1.00m
New capital – billing enhancements	£0.00m	£1.00m	£0.00m	£0.00m	£1.00m
Total set-up costs	£2.80m	£3.50m	£0.30m	£0.30m	£6.90m

Table 9.13: New annual operating costs for the core business resulting from the new framework for competition (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Billing and credit management of retailers	£0.20m	£0.50m	£0.70m	£0.70m
Regulation in respect of the licensed market	£0.20m	£0.20m	£0.20m	£0.20m
Additional frictional costs in core contact centre due to business separation	£0.20m	£0.40m	£0.40m	£0.40m
Retailer of last resort	£0.00m	£0.00m	£0.30m	£0.30m
Contractual relations between retailers and wholesalers	£0.10m	£0.10m	£0.10m	£0.10m
Interface with market mechanisms	£0.00m	£0.00m	£0.40m	£0.40m
Total recurring costs (per year) – core business	£0.70m	£1.20m	£2.10m	£2.10m

We will consider each of these claims in turn.

Analysis of capital costs

Scottish Water's second draft business plan does not identify a breakdown of how each item of capital will be spent. Our assessment of the suitability of this expenditure has therefore been limited.

Wholesale billing system

We accept that Scottish Water will have to implement a billing system for the licence holders. We have therefore allowed Scottish Water's claim of £1.6 million before applying efficiencies.

Additional capital expenditure to maintain new systems

We do not accept that the additional capital expenditure necessary to maintain the new billing system should be greater than the equivalent capital maintenance in the retail subsidiary's billing system. We have therefore allocated £0.15 million from 2007-08.

Internal preparation costs

We consider that any general internal preparation costs within the wholesale business as a result of separation should be minimal. We have therefore disallowed this expenditure.

Contribution to developing market mechanisms

There is still uncertainty surrounding who will pay for the initial capital costs of setting up the systems required to facilitate competition. We have provisionally included these within the allowed capital expenditure for Scottish Water wholesale. We have been informed that a simple market mechanism (like the one we aim to set up) could have a price range of £2.00 million to £3.00 million (in 2003-04 prices). We have therefore allowed £1.50 million in 2006-07 and 2007-08 to reflect the full set-up costs of the market mechanism.

Contact management centre enhancements

We understand that Scottish Water will have lost some scale and scope efficiencies in the contact management centre with the separation of the retail business. We are also aware of the new systems that will have to be implemented to interact with the retailers. We therefore accept this claim.

New capital - billing enhancements

We believe that the capital allocated to the new wholesale billing system should cover this. Without more detailed information we do not accept this claim.

Contingency

For each one of Scottish Water's assessed additional capital costs we have either allowed or disallowed the item. We also consider it appropriate to make an additional £100,000 available to the retail business in each year as a contingency against any currently unidentified capital costs that the wholesale business may incur.

Conclusions on new set-up costs claimed for Scottish Water's wholesale business

We summarise the results of our analysis of Scottish Water's claims for set-up costs in Table 9.14. As with additional capital investment for the retail business, we have reduced projected costs for each year by 17%. This is the current mid-point in our assessment of the scope for capital expenditure efficiency¹¹³.

Table 9.14: Allowed for new capital costs for the core business resulting from the new framework for competition (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10	Total
Wholesale billing system	£1.33m	£0.00m	£0.00m	£0.00m	£1.33m
Additional capital expenditure to maintain new systems	£0.00m	£0.15m	£0.15m	£0.15m	£0.45m
Internal preparation costs	£0.00m	£0.00m	£0.00m	£0.00m	£0.00m
Contribution to developing market mechanisms	£1.25m	£1.25m	£0.00m	£0.00m	£2.49m
Contact management centre enhancements	£0.00m	£0.83m	£0.00m	£0.00m	£0.83m
New capital – billing enhancements	£0.00m	£0.00m	£0.00m	£0.00m	£0.00m
Contingency	£0.08m	£0.08m	£0.08m	£0.08m	£0.33m
Total set-up costs	£2.66m	£2.31m	£0.23m	£0.23m	£5.43m

¹¹³ See Chapter 14 of Volume 5.

We assume that each of the assets in Table 9.14 has an average life of five years.

Analysis of claimed annual operating costs

Billing and credit management of retailers

Scottish Water set out its strategy for managing the interface between the wholesale business and retailers within its second draft business plan¹¹⁴.

It is Scottish Water's intention to create a service management function to deal with retailers. Part of that function will be account management to handle day-to-day billing and contracts. Scottish Water has allocated additional expenditure to meet the cost of this function.

We are not persuaded that Scottish Water will incur significantly greater costs in billing and credit management after the creation of its retail subsidiary. In the first two years of this regulatory control period, Scottish Water's retail subsidiary will be the sole supplier in the market. It is not clear why it should incur significant billing and credit management costs. We have disallowed this claim for the first two years.

In the period after the opening of the market, we accept that Scottish Water may incur some material billing and credit management costs. We have allowed £0.25 million per year to cover these costs.

Regulation in respect of the licensed market

We do not believe that there will be any significant costs associated with regulation and have disallowed this expenditure.

Additional frictional costs in core contact centre due to business separation

Scottish Water believes that certain economies of scale that it has gained through the multi-skilling of contact centre staff will be lost through separation¹¹⁵.

We have made an allowance to reflect the level of disruption that is outside the control of management. The amount allowed is the same as for the retail contact management centre. It is important that, although the two companies must trade at arm's length, they work jointly to reduce any costs that result from poor customer awareness of the respective roles of the organisations.

Retailer of last resort

Scottish Water is required by legislation to act as a retailer of last resort. It is Scottish Water's intention to enter into a partnership agreement to be able to offer this service. This expenditure covers the cost of entering into this partnership agreement. We therefore accept this claim.

Contractual relations between retailers and wholesalers

It is Scottish Water's intention to set up a contact management function to communicate with retailers¹¹⁶.

We believe that there will be no costs in relation to this until the market is open to competition. We have therefore only allowed the costs from 2008-09 onwards.

Interface with market mechanisms

Scottish Water's second draft business plan assigns these costs to cover the wholesale business's costs of its interface with the company developing and operating the market mechanisms¹¹⁷.

We agree that there will be costs associated with this interface from 2008-09 and accept this claim.

Conclusions on annual cost implications for core business

In Table 9.15 we set out our conclusions on the annual cost implications of the separation of activities for the core business of Scottish Water. These costs are before any additional scope for efficiency.

¹¹⁴ Scottish Water, 'Strategic Review of Charges: second draft business plan', page B6-16, (April 2005).

¹¹⁵ Scottish Water, 'Strategic Review of Charges: second draft business plan', page B6-17, (April 2005).

¹¹⁶ Scottish Water, 'Strategic Review of Charges: second draft business plan', page B6-16, (April 2005).

¹¹⁷ Scottish Water, 'Strategic Review of Charges: second draft business plan', page B6-16, (April 2005).

Table 9.15: Allowed for new annual operating costs for the core business resulting from the new framework for competition (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10
Billing and credit management of retailers	£0.00m	£0.00m	£0.25m	£0.25m
Regulation in respect of the licensed market	£0.00m	£0.00m	£0.00m	£0.00m
Additional frictional costs in core contact centre due to business separation	£0.30m	£0.25m	£0.20m	£0.15m
Retailer of last resort	£0.00m	£0.00m	£0.30m	£0.30m
Contractual relations between retailers and wholesalers	£0.00m	£0.00m	£0.10m	£0.10m
Interface with market mechanisms	£0.00m	£0.00m	£0.40m	£0.40m
Total recurring costs (per year) – core business	£0.30m	£0.25m	£1.25m	£ 1.20m

We also believe that the wholesale business will be able to generate additional efficiencies as a result of the separation of activities. This may result either through identifying activities that are no longer required or from pressure from retailers to reduce costs. We believe that the cash raised from additional efficiencies to the wholesale business should be greater than the cash raised from additional efficiencies to the retail business. This is most obviously because the wholesale business is much larger, but it is also because it will not face the same commercial pressures to fund service improvements. Efficiency improvements should therefore reduce costs more quickly.

We have set out our view of additional efficiencies in Table 9.16.

Table 9.16: Additional efficiencies required by the wholesale business (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Additional efficiencies	£0.57m	£2.63m	£4.28m	£5.94m

Summary of costs

The increase in total costs (core and retail combined) as a result of the separation of the retail activities is set out in Table 9.17.

Table 9.17: Impact on total costs of separation of retail activities (outturn prices)¹¹⁸

£m	2006-07	2007-08	2008-09	2009-10
Increased operating costs – retail	£0.73m	£0.80m	£3.93m	£3.95m
Increase operating costs – wholesale	£0.26m	£0.22m	£1.12m	£1.09m
Increased cost of capital	£3.15m	£3.72m	£3.83m	£3.83m
Increased tax	£0.50m	£0.50m	£0.50m	£0.50m
Wholesale efficiencies	-£0.57m	-£2.63m	-£4.28m	-£5.94m
Retail efficiencies	£0.00m	£0.00m	-£2.45m	-£2.35m
Total additional operating expenditure	£4.08m	£2.60m	£2.65m	£1.08m

We have added these costs to the financial model in setting the revenue cap.

The revenue cap for the wholesale business is set out in Table 9.18.

Table 9.18: Revenue cap for the wholesale business (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total non-household revenue (from Table 19.2)	£326.73m	£330.10m	£327.07m	£329.44m
Retail margin	-£32.72m	-£35.49m	-£36.43m	-£36.27m
Non-household wholesale revenue	£294.01m	£294.62m	£290.64m	£293.17m
Household revenue	£642.04m	£661.20m	£667.51m	£673.83m
Secondary revenue	£13.89m	£14.24m	£14.59m	£14.96m
Total revenue	£949.94m	£970.05m	£972.75m	£981.97m

This is calculated by subtracting the retail gross margin from the revenue caps that were set in Chapter 4.

Table 9.19 summarises the additional capital expenditure that is likely to be incurred as a result of establishing the new competition framework.

Table 9.19: Additional capital necessary for the wholesale and retail businesses as a result of separation (2003-04 prices)

	2006-07	2007-08	2008-09	2009-10	Total
Retail capital requirement	£6.26m	£0.25m	£0.25m	£0.25m	£7.02m
Wholesale capital requirement	£2.66m	£2.31m	£0.23m	£0.23m	£5.43m
Total	£8.92m	£2.56m	£0.49m	£0.49m	£12.45m

This expected capital expenditure is included in Chapter 14 of Volume 5. The amount shown is net of the efficiencies target of 17%.

Conclusion

We have set the wholesale revenue cap based on the regulatory accounting information that is available to us. The split between wholesale and retail is a notified item and in the event that there is a material change, the new Commission would conduct an interim determination.

The wholesale revenue cap for each year of the regulatory control period is set out in Table 9.20.

¹¹⁸ We believe that there is scope to accelerate the improvement in operating cost efficiency in both the wholesale and retail business after separation. There is evidence from both the electricity and gas industries that disaggregation of the value chain has identified a number of activities (conducted by the vertically integrated monopoly) that were not adding value. Separate studies by Professor Littlechild and Cambridge Econometrics (highlighted in Volume 4) have shown the improvement in operating cost efficiency that can be achieved through separation. Our estimates assume that less improvement is available in the Scottish water industry than the ex-post analysis of the electricity industry might suggest.

Table 9.20: Scottish Water's wholesale revenue cap (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Revenue cap	£949.94m	£970.05m	£972.75m	£981.97m

The gross margin available to the retail subsidiary of Scottish Water is set out in Table 9.21. We also show the retail revenue cap and the percentage of a non-household customer's annual bill which, on average, covers the costs of providing the retail service.

Table 9.21: Scottish Water's retail subsidiary gross margin (outturn prices)

Nominal prices	2006-07	2007-08	2008-09	2009-10
Non-household retail revenue cap	£326.73m	£330.10m	£327.07m	£329.44m
Wholesale revenue cap	£294.01m	£294.61m	£290.64m	£293.17m
Gross margin	£32.72m	£35.49m	£36.43m	£36.27m
Percentage of retail price required to cover retail services	10.01%	10.75%	11.14%	11.01%

In this chapter we have analysed the costs claimed by Scottish Water as a result of the introduction of the Water Services etc. (Scotland) Act 2005. In the main we believe that much of the extra operating costs incurred will be covered by the scope for additional efficiency. We have, however, allowed some £12.45 million in capital expenditure (in 2003-04 prices) to facilitate the separation of the activities and meet any set-up costs.

We believe that Scottish Water's retail subsidiary should have more than sufficient revenue to deliver the level of service that customers expect.

Section 4: Charges and their impact on customers Chapter 10: Introduction of tariff baskets

Introduction

In Chapters 3 and 4 of this volume, we discussed how we have assessed the level of revenue that Scottish Water should be allowed to raise from customers. This chapter explains our approach in setting charge caps for different groups of customers. Our approach has taken full account of the Ministerial Guidance.

We have established ten tariff baskets to cover the core services provided by Scottish Water¹¹⁹. These tariff baskets will ensure that the removal of the £44 million cross subsidy is as transparent as possible. The tariff baskets should also allow customers to understand the implications of this draft determination on their bills. We published detailed information about the tariff baskets in Appendix 13.

The current structure of retail charges in Scotland

Retail charges to individual customers reflect the service provided. Table 10.1 illustrates the different types of service and customers.

Table 10.1: Current structure of retail charges

		Type of Charge)	
	Fixed £ per annum	Fixed - pence per £ of RV	Volumetric pence per m ³	
WATER				
Unmetered household	1			
Metered household	✓		✓	
Unmetered non-household	✓	✓		
Metered non-household	✓		1	
SEWERAGE				
Unmetered household				
Waste Water (inc. foul and SWD)	✓			
Metered household				
Sewage	✓		✓	
Surface water drainage	✓			
Unmetered non-household				
Sewage	✓	✓		
Surface water drainage		✓		
Metered non-household				
Sewage	1		1	
Surface water drainage		1		
Trade effluent	✓		√ 120	

Household unmeasured water

Unmeasured household customers pay for water charges based on the Council Tax band of their home. Their bill does not depend on the volume of water used. Discounts are provided to single person households and to low income families.

Household unmeasured waste water

Charges for unmeasured household waste water customers are also based on the Council Tax band of their property. This charge includes surface water and roads drainage¹²¹. The same discounts are available as for household unmeasured water.

Household measured water

Fewer than 1% of household customers have a meter. These customers pay a fixed charge based on the size of their meter connection and a volumetric rate based on how much water they consume. All household metered water customers currently have a standard 20mm connection. This is the smallest connection available.

In April 2004, Scottish Water introduced a low user tariff discount for household and non-household metered customers with a standard 20mm connection who use less than 25m³ of water a year¹²². These customers now pay a lower standing charge but a higher volumetric rate for the first 25m³ of water used. Their charges then revert to the standard volumetric rate for consumption greater than 25m³.

Household measured waste water

Household metered waste water customers pay a standing charge based on the size of their water meter connection and a volumetric rate which assumes that 95% of their water consumption is returned to sewer.

These customers pay for surface water and roads drainage based on the Council Tax band of their property.

¹¹⁹ See Volume 8, Appendix 13.

¹²⁰ Trade effluent is charged for using both volume and strength.

¹²¹ Surface water drainage charges cover the cost of draining surface water from a property. Roads drainage charges cover the costs of draining surface water from the public highways.

^{122 1}m³ of water is equal to 1,000 litres.

Non-household unmeasured water

Unmetered non-household customers are charged according to the rateable value of their property. These customers pay two fixed charges, neither of which reflect their water use: a minimum charge for access to the network and an amount that depends on the rateable value of their property.

Non-household unmeasured waste water

Unmeasured non-household waste water customers pay three separate fixed charges: a minimum charge for accessing the network and two charges that depend on the rateable value of the property. The first of these covers waste water discharged to sewer and the second covers surface water and roads drainage.

Non-household measured water

Metered non-household customers pay a standing charge that depends on the size of their meter connection, and a volumetric charge based on how much water they consume.

Non-household measured water customers with a standard 20mm connection are charged in the same way as metered household customers for water.

Larger meter connection sizes range from 25mm to 600mm. Annual water consumption up to 100,000m³ is charged at the standard 20mm volumetric rate. Customers who use in excess of 100,000m³ of water during the year receive a discount from the standard volumetric tariff for any consumption above the 100,000m³ threshold. An increased discount applies above 250,000m³. Customers who commit in advance to using a minimum amount of water can obtain a larger discount on consumption above 100,000m³ and 250,000m³.

Non-household measured waste water

Non-household waste water customers pay a fixed charge based on the size of their water meter connection and a volumetric rate based on an assumption that 95% of their water consumption is returned to sewer. If a

customer can demonstrate that less than 95% of water returns to sewer (for example, a company that uses water in its production processes) then they can apply for an appropriate abatement of charges.

There are no discounts for customers who discharge large volumes of waste water.

The surface water drainage charge for non-household metered customers, whether metered or unmetered, is based on the rateable value of their properties.

Trade effluent

Charges for trade effluent are based on the Mogden formula¹²³. This formula assesses a charge that reflects the costs of treating a particular volume of waste water of a particular strength.

Trade effluent customers pay an annual fixed charge on the basis of their expected effluent discharge and a variable rate based on the actual volume and strength of the effluent discharged.

A definition of tariff baskets

In the previous section we summarised the services provided by Scottish Water. A tariff basket includes all of the tariffs that impact on customers who receive a particular service. For example, if measured water non-household customers were considered as a single group, all of the tariffs that impact on them would be included. Such a tariff basket would therefore include the standing charges relating to the different sizes of connection available and the volumetric tariffs.

The balance of tariffs within the basket is determined by the number and type of connections, the consumption of water and by increases or decreases in the tariffs included in the basket.

Total revenue is determined by adding together the revenue generated by each tariff basket. The revenue from an individual tariff basket is assessed by calculating the sum product of the customer base and the tariffs that apply.

¹²³ We discussed Scottish Water's charging for trade effluent and its use of the Mogden formula in Volume 2 of our methodology consultation. This is available on our website at www.watercommissioner.co.uk.

We provide below an illustrative example of how the tariff basket works. In the example there are just two tariff baskets.

Table 10.2: Example of how tariff baskets operate

	Number of customers Years 1 + 2	Consumption Years 1 + 2	Tariff Year 1	Tariff Year 2	Revenue Year 1	Revenue Year 2
Basket A	5	10	£1.00	£1.50	£50.00	£75.00
Basket B	5	10	£2.00	£2.50	£100.00	£125.00
Total	10	20	-	-	£150.00	£200.00

A 50% increase is allowed in Basket A and a 25% increase in Basket B. Revenue from Basket A increases from £50 to £75 and revenue from Basket B from £100 to £125. Total revenue increases from £150 to £200.

Calculating the retail charge cap

The retail charge cap is the weighted average increase in tariffs within a basket. It is therefore the maximum amount by which tariffs on average can increase within a tariff basket.

In this draft determination we have set retail charges relative to the retail price index.

The retail charge cap regime applied in Scotland will mirror that which is used in England and Wales. Scottish Water would be permitted to carry over any unused retail change in charges from one year to following years. Unused charge cap is denoted with the letter 'u'¹²⁴. The real retail charge cap is denoted by the letter 'K'.

The maximum retail charge cap is therefore determined as follows:

Charge cap ≤ RPI + K + u

The use of tariff baskets: ensuring compliance with retail charge caps

We will check that the combined impact of changes in the individual tariffs that make up a customer's bill are consistent with the appropriate retail charge cap. We do this by calculating a 'weighted average' change in all of the tariffs within the basket. We compare this with the appropriate retail charge cap.

The weighted average change in retail charges is calculated by multiplying the percentage of tariff basket revenue that each tariff comprises, by the change in the tariff. This gives a weighted percentage increase for each tariff. The total of these weighted percentage increases is then the overall weighted average.

This is illustrated using a sample tariff basket containing just three tariffs.

Table 10.3: The use of weighted average tariffs

	% increase (D)	% of total revenue (E)	Weighted % increase (D x E)
Tariff A	5%	50%	2.5% (A)
Tariff B	-5%	20%	-1% (B)
Tariff C	20%	30%	6% (C)
Weighted average (A+B+C)	-	-	7.5%

The weighted average increase provides a good indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change.

The impact of a change in tariffs may be different in subsequent years. It will depend on the importance of that tariff to the revenue contributed by that tariff basket. In Table 10.5, the importance of Tariff A to total revenue has declined, while Tariff B's has increased. The increases in tariffs remain the same.

¹²⁴ This option to add any unused portion of a charge cap to the allowed change in a particular year is important. In particular, it removes the risk for Scottish Water in providing the benefit of out-performance in a previous year to customers in the form of a rebate. Should this foregone revenue ever become necessary, Scottish Water could raise more revenue from customers (to the maximum value of 'u') in the year of need.

Table 10.4: Effect of changing usage of different tariffs

	% increase	% of total revenue	Weighted % increase
Tariff A	5%	40%	2.0%
Tariff B	-5%	30%	-1.5%
Tariff C	20%	30%	6%
Weighted average	-	-	6.5%

We believe that this approach ensures that all customers within a particular tariff basket are treated equitably. Introducing tariff baskets into the charging regime will also allow us carefully to analyse the impact of tariff changes on total revenue, when customers each buy a different mix of services. It should also better enable us to identify the potential consequences for customers of particular changes in tariffs.

Timetable for setting charges

We have established a clear timetable for the annual tariff setting process. The timetable for 2006-07 is set out below. We use the following terms:

'Charging Year' – the financial year to which the tariffs will apply (in this example, 2006-07).

'Setting Year' – the financial year in which the tariffs are set (which is one year prior to the charging year, 2005-06 in this example).

'Reference Year' – the financial year from which customer information is taken (which is two years prior to the charging year, 2004-05 in this example).

Table 10.5: Timetable for setting charges for 2006-07

End September in Reference Year (2004-05)	Customer numbers setRateable value set
End March in Reference Year (2004-05)	Water and sewage volumes set Trade effluent volumes and loads set Revenue split set
April of Setting Year (2005-06)	Scottish Water proposes new tariffs (if appropriate)
June of Setting Year (2005-06)	Scottish Water submits customer numbers, rateable value information, consumption and revenue split in the annual 'June return' for the Reference Year
Beginning of September in Setting Year (2005-06)	Scottish Water submits scheme of charges, including tariff basket information
End of November Reference Year (2004-05) to end of November Setting Year (2005-06)	The RPI that is to be applied to charges is measured
December of Setting Year (2005-06)	We write to Scottish Water to set the inflation figure
End December in Setting Year (2005-06)	We either approve the proposed scheme of charges or announce an alternative scheme with an appropriate explanation
1 April in Charging Year (2006-07)	New tariffs take effect

We recognise that tariffs will not be finalised until the end of December in the year before they would come into effect. We raised this as an issue in our methodology consultation document and most respondents nevertheless agreed with our proposed timescale.

This draft determination has set retail charge caps that are consistent with the Ministerial Guidance. These will apply from April 2006. We have also set out in detail the weighting to be applied in each year to each tariff and forecasts of changes in the customer base.

The tariff basket charge caps should allow most customers to have a broad understanding of the likely level of their bill in each year of the regulatory control period. The timeline for the tariff approval process will be the same each year.

We have used the following information to determine the appropriate retail charge caps in this draft determination. Actual information for the Reference Year will be available for the final determination:

- estimated half-year customer numbers from the Reference Year;
- estimated half-year rateable values in the Reference Year;
- estimated water and sewage volumes for the Reference Year;

- estimated trade effluent volumes and loads for the Reference Year;
- · estimated revenue split in the Reference Year; and
- estimated change in RPI between 1 November in the Reference Year and the end of October in the Setting Year.

In our methodology consultation 125, we proposed creating ten tariff baskets. Most stakeholders supported this proposal.

We have therefore used the following ten tariff baskets:

- household unmeasured water;
- household unmeasured waste water;
- non-household unmeasured water;
- non-household unmeasured waste water;
- measured water with 25mm connection or greater;
- measured waste water with 25mm connection or greater;
- surface water drainage (excluding unmeasured household);
- trade effluent;
- standard metered water connection 20mm; and
- standard metered waste water connection 20mm.

Summary

The introduction of tariff baskets should ensure that customers are better placed to understand how their bills are likely to change during the regulatory control period. It will also increase our understanding of the impact of any tariff changes on specific groups of customers.

In the next chapter we outline the charge caps for each tariff, which we have set in this draft determination.

¹²⁵ Available on our website at www.watercommissioner.co.uk.

Section 4: Charges and their impact on customers Chapter 11: Limits on retail and wholesale charges

Introduction

In the previous chapter we explained that we use tariff baskets to set charge limits on the charges that customers will have to pay. This chapter explains the charge limits that will apply to each of the ten tariff baskets that we have established. These charge limits determine the average increase in tariff that will be allowed within a basket. We also set out the assumptions that we have made to calculate these charge limits.

This chapter contains only a summary of the information that we have used in our tariff basket models. The full information is presented in Appendix 13.

In Chapter 14 we explain how these charge limits are likely to affect the bills of representative standard customers.

Ministerial guidance on charging

In Chapter 4 we outlined the revenue that we propose to allow Scottish Water to collect from customers between April 2006 and March 2010. We explained that this allowed for level of revenue should allow Scottish Water to deliver both the Ministers' 'essential' and 'desirable' objectives for the industry in the 2006-10 regulatory control period. Moreover, we have set retail charges at a level that will ensure that Scottish Water complies with each of the cash-based financial ratios targeted by Ofwat in its recent final determinations ¹²⁶ for the water and sewerage companies in England and Wales.

The Scottish Ministers also set out the principles to be applied when translating the allowed for level of revenue into retail charges to customers. The principles they required were as follows:

- Retail charges to be set on a harmonised basis across Scotland.
- Retail based on Council Tax bands for household unmeasured water charges should continue. No additional incentive for household customers to become metered should be created.

- A rebalancing of £44 million of revenue from nonhousehold customers to household customers in order to reduce cross-subsidies between the groups.
- A new 25% discount for household customers in receipt of Council Tax benefit.
- The 50% discount for second homes to be removed.
- A long-term aim to phase out charging for nonhousehold customers based on rateable values, by:
 - moving to full metering of non-household customers, as far as is practicable by 2010; and
 - moving to banded charges for roads drainage and highway drainage charges.

We discussed the Ministerial Guidance more fully in Volume 4, Chapter 14. In Table 11.1 we summarise the principles of charging that Ministers required.

Table 11.1: Ministers' principles of charging

	Current charging arrangements 2005-06	Updated charging arrangements for 2006-10
Unmeasured household water and waste water	Based on Council Tax band of property. Discounts available for: single occupants (25%); and second home owners (or properties which are vacant) ¹²⁷ (50%). Transitional relief available for customers in receipt of Council Tax benefit.	Continue to be based on Council Tax band: Discounts available to single occupants to remain. Discounts for second-home owners to be removed. Customers in receipt of Council Tax benefit to get a new 25% discount.
Unmeasured non- household water and sewage	Minimum charge for connection to the network. Additional charge based on a proportion of the rateable value of the property.	To be metered where practical and as far as is possible by 2010.
Metered water and sewage	Fixed charge based on the size of the meter. Additional charge based on the amount of water consumed and waste water discharged.	No change to charging arrangements.
Surface water drainage	Measured household customers pay in relation to their Council Tax band. Non-household customers pay a charge that is a proportion of the rateable value of the property.	No changes announced for household customers. Non-household customers to pay in relation to the surface area of their property. Change to be implemented as far as is practical by 2010.

This draft determination complies fully with the Ministers' guidance on both the investment and charging objectives.

¹²⁶ This assumes that Scottish Water meets the capital expenditure and allowed level of operating costs outlined in Volumes 5 and 6.

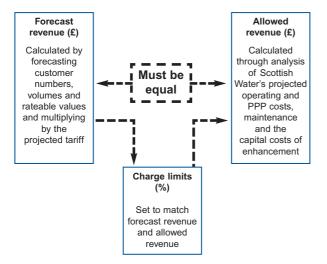
¹²⁷ As part of a change in Council Tax collection arrangements, second home owners in some council areas no longer receive the full 50% discount. Councils can, at their discretion, reduce it to as low as 10%.

Revenue and revenue rebalancing

We calculate retail charge limits by ensuring that our forecast of revenue (based on our retail charge limits and expectations of the customer base) matches the allowed level of revenue in each year¹²⁸. The customer base is referred to as the tariff multiplier. It is a function of the number and type of connection and the volume of water consumed (or waste water discharged).

Figure 11.1 illustrates the charge-setting process. We firstly calculate retail charge limits for both Scottish Water's core functions and its retail subsidiary combined. We then calculate a separate overall limit on the charges of Scottish Water's core (wholesale) function.

Figure 11.1: How retail charge limits are set129



The retail charge limits for non-household customers will limit the increases in retail charges that the new retail subsidiary of Scottish Water can levy on its customers. We anticipate that the new Commission would make it a licence condition of the new retail subsidiary that it agrees to be bound by these retail charge caps. The non-household charge caps will also apply to Scottish Water in its role as the 'supplier of last resort'.

We have also set limits on the increases in charges that Scottish Water can charge its own and future retailers of water and waste water services to non-household customers. These limits are examined in the section below, 'Charge limits for Scottish Water's core wholesale business'.

We explained in Chapter 4 that we set an allowed level of revenue for both core and retail functions using our financial model. The revenue that we have allowed Scottish Water in the 2006-10 regulatory control period is summarised in Table 11.2.

Table 11.2: Total allowed for revenue 2006-10 (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Allowed revenue	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m

This allowed for level of revenue covers both primary and secondary services. Primary services include water and waste water services (eg the collection of sewage). Secondary services include activities such as providing water for building work and field troughs, and septic tank services.

We only set retail charge limits for primary services. We limit the revenue that can be collected from secondary services but do not determine individual charges. We deduct the expected revenue from secondary services each year from the total allowed for revenue to calculate the level of revenue that we need to raise from customers of primary services. This calculation is shown in Table 11.3.

Table 11.3: Calculation of primary revenue¹³⁰ (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Total allowed revenue	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Secondary revenue	£13.9m	£14.2m	£14.6m	£15.0m
Primary revenue	£968.8m	£991.3m	£994.6m	£1,003.3m

In its second draft business plan, Scottish Water forecast that secondary revenue would increase in line with inflation each year. We have accepted this profile for secondary revenues.

Our retail charge limits will remove the £44 million cross subsidy to household customers from non-household customers by the end of the 2006-10 regulatory control

¹²⁸ The allowed level of revenue is discussed in Chapter 4.

¹²⁹ The charge limits will influence the individual tariff within each basket.

¹³⁰ Totals may not add due to rounding.

period. We have used the household and non-household shares of primary revenue in 2003-04 to calculate the required shares in 2009-10. Table 11.4 sets out the calculation.

Table 11.4: Calculation of revenue shares from household and non-household customers (2003-04 prices)

Primary revenue	2003-04 actual revenue (as per Scottish Water's Annual Return 2003-04)	Rebalancing, based on 2003-04 (from Ministerial Guidance)	2003-04 revenue after rebalancing
Household customers	£580.3m	+£44m	£624.3m
Non-household customers	£348.6m	-£44m	£304.6m
Total	£928.9m	£0m	£928.9m
Percentage household	62.5%	-	67.2%
Percentage non-household	37.5%	-	32.8%

We have therefore set charge limits such that forecast revenue in 2010 is:

- £673.8 million from household customers (ie 67.2% of £1,003.3 million); and
- 329.4 million from non-household customers (32.8% of £1,003.3 million).

The information we use for the baseline and forecast tariff multipliers

Background

We explained earlier that we set charge limits by matching forecast revenue with the allowed level of revenue for each year. To do this we have to forecast revenue for each year. We begin by forecasting the tariff multipliers for each year.

We start with the best information that is available to us for customer numbers, volumes and rateable values in 2004-05¹³¹ along with forecasts of information for these items for 2005-06. These form our baseline tariff multipliers. We then forecast changes in these tariff multipliers from this base.

Where possible, we have used information from Scottish Water's business plans or its subsequent clarifications. We also draw on comparisons with the companies south of the border.

Using information from Scottish Water's business plans poses a number of problems for us. Much of this information has been inconsistent (even when Scottish Water has resubmitted it to us). There have been large variations in the reported number of customers, let alone the services that these customers use. We are disappointed that Scottish Water has not provided more consistent information or at least a fuller explanation of the reasons for the changes.

We have written to the three former authorities and to Scottish Water on a number of occasions asking for improvements in the information about customers¹³². We had considered that this information was beginning to improve, until we received Scottish Water's revised scheme of charges¹³³ in December 2004. This informed us that cleansing of the non-household customer database which Scottish Water had undertaken had revealed that there was a large number of errors. The first draft business plan published a month earlier had not made any reference to the scale of the errors. Customer numbers, rateable values and volumes consumed were now said to be considerably lower than previous estimates.

Scottish Water's second draft business plan showed the impact of these changes in the customer base on the underlying revenue. At this point, Scottish Water took the decision to adjust the tariff multipliers for 2004-05 to reflect prior year adjustments. This artificially reduced the reported customer base in 2004-05. We therefore asked Scottish Water to resubmit the supporting customer numbers.

Customer baseline for the Strategic Review of Charges 2006-10

Scottish Water resubmitted tariff multipliers for 2004-05 and 2005-06. The resubmitted information included the results of a further three months of data cleansing. In

¹³¹ We chose 2004-05 because it is the latest year for which customer information is available and it is also the 'reference year' for our tariff basket formula for 2006-07.

¹³² See WIC 1,4, 9,14,22 and 52.

¹³³ The scheme of charges is the list of all of the tariffs that Scottish Water will charge its customers.

this resubmitted information, Scottish Water did not adjust its forecast customer numbers for the 2006-10 regulatory control period. The resubmitted information for future years was therefore inconsistent with the revised information for 2004-05 and 2005-06.

Table 11.5 shows the range of revenue figures that Scottish Water has submitted for 2004-05.

Table 11.5: 2004-05 revenue figures submitted by Scottish Water¹³⁴

	Budget (from period 12 RAB Return)	First draft business plan and first scheme of charges submission Forecast	Second scheme of charges submission Forecast	Second draft business plan Forecast	Actual revenue 2004-05 (draft)
Household	£606.6m	£607.9m	£607.9m	£606.2m	£606.2m
Non-household	£320.7m	£320.0m	£302.9m	£302.2m	£284.1m
Trade effluent	£29.5m	£27.8m	£26.3m	£24.9m	£23.2m
Total	£956.8m	£955.6m	£937.1m	£933.3m	£913.5m

Revenue forecasts for household customers, which is collected by the local authorities, have not varied significantly between different information submissions.

However, there was a significant change in the information that was provided to us by Scottish Water concerning nonhousehold revenue. This is a £43.3 million reduction between budget revenue and draft actual revenue for the 2004-05 accounts. This represents 11.4% of nonhousehold customer revenue and 21.4% of trade effluent revenue. Scottish Water has said that part of the downward adjustment relates to errors in previous years.

Table 11.6 compares budgeted revenue for 2004-05 with revenue information provided by Scottish Water, which does not include the adjustments for previous years' errors.

Table 11.6: Revenue information (excluding prior year adjustments) provided by Scottish Water

	Budget (from period 12 RAB Return)	First draft business plan and first scheme of charges submission Forecast	(Draft) actual detailed reconciliation from resubmitted B8 tables ¹³⁵ (excludes prior year adjustments)	(Draft) actual 2004-05 (excluding prior year adjustments) (from response to BP16 query ¹³⁶)
Household	£606.6m	£607.9m	£607.6m	£606.2m
Non-household	£320.7m	£320.0m	£314.1m	£296.7m
Trade effluent	£29.5m	£27.8m	£23.6m	£27.5m
Total	£956.8m	£955.6m	£937.1m	£930.4m

¹³⁴ Totals may not add up due to rounding.

¹³⁵ B8 tables are the tariff multiplier tables.

¹³⁶ This is the first query on Scottish Water's business plan we raised with regards to revenue adjustments.

As Table 11.6 shows, the underlying reduction in revenue is rather less. However, in Scottish Water's revised submission of the tariff multipliers we received two different versions of the underlying customer base. We have used the resubmitted B8 tables as the starting point for our analysis of the revenue baseline. We used this information submission because it also contains the customer numbers we require.

The change in the customer base is considerable. Table 11.7 compares Scottish Water's forecast customer numbers for 2004-05 and 2005-06 with the figures provided in its June 2004 regulatory return.

Table 11.7: Reported change in underlying customer base (non-household properties connected to the water service)

	Annual Return 2003-04	Resubmitted business plan tables 2004-05	Resubmitted business plan tables 2005-06
Measured non-household	81,839	79,219	73,109
Unmeasured non-household	57,854	54,272	48,210
Total	139,693	133,491	121,319

In this draft determination, we have used the much lower revised 2005-06 projected revenue in setting retail charge caps for the regulatory control period.

We are concerned that there may be a large number of customers who are not being billed or are not being billed for the correct amount. We suggest that identifying these customers should be a priority for Scottish Water. It is unlikely that all billing errors will result in too much revenue being accrued by Scottish Water.

Customer numbers

Another of our concerns relates to the revised number of non-household customers, which appears to be rather low. We have compared Scottish Water's reported numbers of non-household customers to the:

- · reported number of businesses in Scotland; and
- the situation in England and Wales.

Table 11.8 compares Scottish Water's reported number of non-household customers in its 2003-04 Annual Return (prior to the downwards adjustments) with the latest available information on the number of businesses in Scotland.

Table 11.8: Comparisons of business numbers in Scotland¹³⁷

	Number of businesses
Scottish Water's non-household water customers 2003-04	139,693
VAT or PAYE registered businesses in Scotland 2003	147,695
Total number of businesses in Scotland 2003 (including customers registered for VAT or PAYE)	262,750

While we recognise that many businesses may not have a water connection, we believe that the sort of downwards adjustments that we have seen in recent months would seem to be inconsistent with the actual number of businesses that exist.

We compared the numbers of businesses and number of households served by each of the water companies in England and Wales. Our analysis is set out in Table 11.9.

¹³⁷ Source of number of businesses in Scotland is Scottish Executive, Scottish Economic Statistics 2004, 2004, Table B1.2.

Table 11.9: Number of businesses and households for water companies in Great Britain

	Household customers	Non- household customers	Non-household customers as a percentage of household customers
South West	636.2	76.0	11.9%
Wessex	470.9	52.3	11.1%
Mid Kent	215.3	20.8	9.6%
Bournemouth	168.7	16.0	9.5%
Cambridge	109.8	9.9	9.0%
Bristol	431.8	38.4	8.9%
Dwr Cymru	1,149.6	101.6	8.8%
Folkestone & Dover	65.3	5.2	7.9%
Dee Valley	104.4	8.2	7.9%
Tendring Hundred	64.3	4.9	7.7%
South East	535.3	41.1	7.7%
Severn Trent	2,996.0	228.0	7.6%
United Utilities	2,743.1	203.0	7.4%
South Staffordshire	494.9	35.5	7.2%
West Hampshire	316.9	22.4	7.1%
Southern	925.2	65.4	7.1%
Yorkshire	1,875.4	132.5	7.1%
Anglian	1,790.7	124.1	6.9%
Portsmouth	269.5	17.7	6.6%
Sutton & East Surrey	246.6	15.9	6.5%
Scottish Water	2,219.0	139.7	6.3%
Thames	3,189.7	200.0	6.3%
Essex & Suffolk	687.9	40.4	5.9%
Northumbrian	1,032.3	59.1	5.7%
Three Valleys	1,150.7	61.9	5.4%
Weighted average			7.2%

We would expect there to be a higher proportion of businesses to properties in more rural areas than in more urban areas.

Scottish Water seems to have relatively few non-household properties connected per household. Most companies with a similar proportion of non-household customers are located in the South East of England. If Scottish Water had the British average proportion of businesses to households, then it would have around 160,000 non-household customers. This would seem to be not inconsistent with information about the number of businesses in Scotland.

Scottish Water's restated customer base gives it one of the lowest proportions of businesses to households of any company in Britain. Again, we consider that a priority for Scottish Water would be to examine its records carefully to make sure that it is billing all customers who are receiving a service.

We believe that there needs to be a detailed review of the customer base, including comparisons with network maps and analysis of void properties.

Notwithstanding the concerns we have about the quality of the information provided by Scottish Water, we have accepted its projected lower customer numbers and revenue for 2005-06.

We now explain baseline and forecast tariff multipliers for household and non-household customers separately.

Baseline and tariff multipliers for household water and waste water customers

Baseline customer numbers - unmeasured

Unmeasured household customers pay for their water and sewerage services according to the Council Tax band of the property in which they live. For Council Tax purposes, properties are banded from A to H. In setting water charges we look at the number of Band D equivalent properties.

A number of discounts apply to unmeasured household customers. For example:

- bills for customers in receipt of disability benefits are discounted by one band from the banding of the property in which they live;
- properties with single adult occupancy receive a 25% discount; and
- properties that are the owners' second home receive a 50% discount.

The percentage of a Band D bill paid by each band is shown in Table 11.10.

Table 11.10: Proportion of Band D bill for each customer

	Full charge	25% discount	50% discount
Band A (disabled relief)	5/9	3.75/9	2.5/9
Band A	6/9	4.5/9	3/9
Band B	7/9	5.25/9	3.5/9
Band C	8/9	6/9	4/9
Band D	9/9	6.75/9	4.5/9
Band E	11/9	8.25/9	5.5/9
Band F	13/9	9.75/9	6.5/9
Band G	15/9	11.25/9	7.5/9
Band H	18/9	13.5/9	9/9

The 'Band D equivalent' is calculated by multiplying the number of customers in each category by the relevant number of ninths of a Band D bill and dividing by 9.

We asked Scottish Water to provide customer information at an individual band level. The detailed assumptions that we used are shown in Appendix 13.

Unmeasured household water and waste water customers for 2004-05 and 2005-06 are shown in Table 11.11. We have taken this information from Scottish Water's second draft business plan. This forms the baseline for projections of future customer numbers.

Table 11.11: Baseline unmeasured household customer base

	Band D equivalent properties 2004-05	Band D equivalent properties 2005-06
Water	1,838,904	1,851,306
Waste water	1,757,201	1,769,222

Baseline customer numbers - measured

Measured household customers' bills comprise three elements:

- An annual fixed charge for connection based on the size of their connection. All measured household customers currently have the smallest connection available (20mm).
- A volumetric charge based on the volume of water they consume and waste water they discharge.

 A charge for surface water drainage based on the Council Tax band of the property.

We set out the household measured revenue base for 2004-05 in Table 11.12. Again, we have taken this information from Scottish Water's second draft business plan.

Table 11.12: Baseline measured household customer base

	2004-05	2005-06			
Water					
Number of connected properties	438	438			
Total volume (m³)	70,080	70,080			
Sewage					
Number of connected properties	158	158			
Total volume (m³)	16,591	16,591			
Surface water drainage					
Property drainage – Band D equivalent connected properties	285	285			
Roads drainage – Band D equivalent connected properties	285	285			

Future trends in household customer numbers

We have assumed that no unmeasured household customers will switch to a measured charging basis during the 2006-10 regulatory control period. It is possible that some high banded households may have a small incentive to switch to measured tariffs, but this draft determination does not create any new incentives to switch. This is broadly in line with the Ministerial Guidance. It was not possible to treat all non-household customers in the same way and not increase the absolute number of households that may have a small incentive to switch. Since all non-household bills would fall relative to household bills, the tariffs for a household metered customer would also fall relative to an unmeasured household bill. We believe that there is only likely to be a smaller number of additional households that will have an incentive to switch to a metered supply.

Unmeasured household customer forecasts

In its second draft business plan, Scottish Water states that it believes that the number of households will increase

by 0.6% per year. Our analysis has shown that new households tend, on average, to have a higher Council Tax band than existing households. This causes the number of Band D equivalent properties to increase more quickly than the number of connected properties. Scottish Water has recognised this and has estimated the annual increase in Band D equivalent properties at 0.67%.

Only a small percentage of households on the Council Tax register are not connected for water and sewerage services. We believe that this will not affect our analysis.

Table 11.13: Historical growth rates in number of properties

Customer numbers (chargeable)	Band D equivalent properties		
0.62%	0.77%		
0.70%	0.66%		
0.84%	0.98%		
0.63%	0.76%		
0.77%	0.89%		
0.59%	0.89%		
0.79%	0.91%		
0.81%	1.06%		
0.72%	0.86%		
	(chargeable) 0.62% 0.70% 0.84% 0.63% 0.77% 0.59% 0.79% 0.81%		

Table 11.13 shows that the growth rate for chargeable properties and Band D equivalent properties has consistently been higher than that which is forecast by Scottish Water.

The Ministerial Guidance requires investment to remove development constraints for 15,000 new homes a year in the 2006-10 regulatory control period. If we assume that only these 15,000 homes are built each year, this results in an annual growth rate in the number of connected properties of 0.68%. This is less than the average growth in connected properties over the past eight years. It would, however, imply an annual growth rate of 0.89% in Band D equivalent properties.

The Ministerial Guidance required the following changes to the structure of unmeasured household charges with effect from April 2006:

- Discounts for customers with second homes are to be abolished in 2006-07.
- Transitional relief for customers receiving Council Tax benefit (funded by the Scottish Executive) is to be abolished in 2006-07.
- A new 25% discount for customers who receive Council Tax benefit is to be introduced in 2006-07.

Removing the discounts for second home owners increases the revenue to Scottish Water. The introduction of a 25% discount for customers who receive Council Tax benefit will decrease its revenue.

Table 11.14 shows the net change in the number of Band D equivalent customers as a consequence of the Ministerial Guidance. We have assumed that 75% of customers receiving a 50% discount are second home owners and that customers receiving Council Tax benefit continue to represent broadly the same proportion of the total number of households in each band.

Table 11.14: Projected movements in Band D equivalent customers 2006-07 as a result of changes in discounts

	Water customers	Waste water customers
Band D equivalent customers before changes in discount structure	1,868,659	1,786,541
Reduction in Band D equivalent customers due to introduction of 25% discount for customers in receipt of Council Tax benefit	52,689	49,572
Increase in Band D equivalent customers due to removal of 50% discount for customers with second homes	37,966	33,218
Total number of Band D equivalent customers following changes in discount structure	1,853,938	1,770,189
Net difference	-14,721	-16,357

This change however also impacts on the expected rate of change in the number of Band D equivalent properties.

Customers in receipt of Council Tax benefit are generally in low-banded households, while second homes seem to be generally in higher bands. The slowly growing categories of property that pay a smaller proportion of a Band D property now have a lower overall weight in the calculation of Band D equivalent properties. Conversely,

the faster growing categories of property that pay more than a Band D property now have a greater overall weight.

Our analysis suggests a predicted trend growth for 2006-07 to 2007-08 of between 0.92% and 0.98%. Our projections of Band D equivalent customers for 2004-05 to 2009-10 are shown in Table 11.15.

Table 11.15: Projections of water and waste water unmeasured household Band D equivalent customers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Water	1,838,904	1,851,306	1,853,938	1,871,402	1,888,870	1,906,336
Waste water	1,757,201	1,769,222	1,770,184	1,787,657	1,805,128	1,822,596

Measured household customer forecasts

In its second draft business plan, Scottish Water assumed that measured household customer numbers and volumes will remain constant until 2010. We have accepted this assumption.

Our projections for measured household customers are summarised in Table 11.16.

Table 11.16: Projections of water and waste water measured household customers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10			
Water									
Number of connected properties	438	438	438	438	438	438			
Total volume (m³)	70,080	70,080	70,080	70,080	70,080	70,080			
Sewage									
Number of connected properties	158	158	158	158	158	158			
Total volume (m³)	16,591	16,591	16,591	16,591	16,591	16,591			
Surface water drainage									
Roads drainage – Band D equivalent connected properties	285	285	285	285	285	285			
Property drainage – Band D equivalent connected properties	285	285	285	285	285	285			

We use the customer numbers in Tables 11.15 and 11.16 to project revenue and to set retail charges for household customers. The detailed information that underlies the summaries presented in these tables can be found in Appendix 13.

Baseline and tariff multipliers for non-household water and waste water customers

Baseline tariff multipliers – unmeasured non-household

Retail charges for unmeasured non-household customers are currently based on the rateable values of their properties. Bills for these customers comprise three elements:

- a minimum charge for connection to the network;
- an additional charge for water and sewage based on the rateable value; and
- an additional charge for surface water drainage based on the rateable value.

Baseline customer numbers and rateable values for water and waste water are shown in Table 11.17. We have taken these from the Scottish Water business plan.

Table 11.17: Baseline unmeasured non-household customer base 2004-05 and 2005-06

	2004-05	2005-06
Water		
Number of connections	54,272	48,210
Rateable value (£m) ¹³⁸	472.7	425.3
Waste water		
Number of connections	51,384	45,547
Rateable value (£m)	465.1	418.4

Further detailed information about non-household unmeasured customers can be found in Appendix 13.

Baseline customer numbers – measured non-household

Bills for measured non-household customers comprise three elements:

- an annual fixed charge for connection based on the size of their meter;
- a volumetric charge based on the volume of water they consume and sewage they discharge; and
- a charge for surface water drainage based on the rateable value of the property.

Baseline information for the number of meters, meter sizes, consumption and rateable values for water and waste water are shown in Table 11.18.

Table 11.18: Baseline measured non-household customer base 2004-05 and 2005-06

	2004-05	2005-06
Water		
Number of meters		
20mm or less	68,623	69,324
Greater than 20mm	12,802	8,080
Total number of meters	81,425	77,404
Volumes (m³)		
20mm meter, volumes less than or equal to 25m ³	1,445,000	1,485,000
20mm meter, volumes greater than 25m ³	30,315,000	30,365,000
Greater than 20mm meter, volumes less than or equal to 100,000m ³	56,121,078	55,536,656
Greater than 20mm meter, volumes of greater than 100,000m³ but less than or equal to 250,000m³	11,615,413	10,697,991
Greater than 20mm meter, volumes of greater than 250,000m ³	52,360,370	50,288,304
Total volume	151,856,861	148,372,952
Sewage		
Number of meters		
20mm or less	49,137	48,112
Greater than 20mm	7,222	3,257
Total number of meters	56,359	51,369
Volumes		
20mm meter volumes less than or equal to 23.75m ³	977,446	1,024,946
20mm meter volumes greater than 23.75m ³	16,573,000	16,611,000
Volume discharged for all other meter sizes	26,140,126	24,847,850
Total volume discharged	43,690,572	42,510,596

We have included the complete breakdown of metered non-household customer information in Appendix 13.

¹³⁸ Includes a small number of customers who continue to receive charitable relief. These discounts were formerly provided by local authorities and were inherited by the three former water authorities when they were formed in 1996-97. Following public consultation, Ministers announced the phased removal of these discounts from 2000. All charitable relief should have ended by April 2006.

Future trends

Ministers have set Scottish Water the objective of moving to full metering of non-household customers (as far as is practicable) by 2010.

When Scottish Water resubmitted its customer number tables to us, it had updated the information for 2004-05 and 2005-06. However, it had not updated the information for future trends. As a result, the series of future trends that we have from Scottish Water are not consistent with the information on customer numbers provided for 2004-05 and 2005-06.

We have therefore had to forecast changes in the customer base from the 2004-05 and 2005-06 information submitted by Scottish Water.

Two factors have an impact on the non-household customer base:

- underlying changes in customer numbers and volumes as a result of economy-wide factors; and
- changes in the way that existing customers pay for the services they receive.

We examine each of these in turn.

Underlying trend changes – customer numbers

We have used historical trends in customer numbers to understand likely changes in the customer base. These trends are set out in Table 11.19.

Table 11.19: Numbers of businesses (excluding central and local government) by size band 1999 to 2003¹³⁹

	1999	2000	2001	2002	2003	Percentage change 1999-2003
0-49 employees	226,510	230,865	237,555	246,300	256,855	13.4%
50-249 employees	3,270	3,350	3,500	3,490	3,415	4.4%
250+ employees	2,220	2,245	2,345	2,295	2,270	2.25%

It is clear that there has been a general rise in the number of businesses in Scotland over recent years. A general rise in the number of businesses could be expected to increase the number of businesses that Scottish Water serves.

The Ministerial Guidance requires that 2,025 hectares of commercial land should be made available for development. Scottish Water has assumed 28 household population equivalents per hectare¹⁴⁰. This suggests an annual volume of 1,420m³ per hectare (based on Scottish Water's information on consumption). We have assumed that new businesses have the same consumption characteristics as current unmeasured customers (331m³ per year). This suggests approximately 4.3 businesses per hectare. This is around 8,707 new businesses over the regulatory control period – or around 2,177 new businesses per year.

Our projections of total non-household customers for water and waste water are shown in Table 11.20.

Table 11.20: Projected total non-household customers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Non-household customers (water)	133,491	121,319	123,496	125,673	127,850	130,027
Non-household customers (waste water)	105,283	94,901	97,078	99,255	101,432	103,609

As can be seen from Table 11.20, despite our assumptions about a growing customer base, Scottish Water still has fewer customers in 2009-10 than it claimed to have in 2004-05.

Underlying trend changes – volumes

Scottish Water has made different assumptions about the water use of different categories of non-household customers. We have reviewed the evidence that Scottish Water submitted. We agree, in principle, that large users will exhibit greater volume declines than customers who use less water. We have assumed that there will be no net increase or decrease in the consumption of customers with the lowest water use (those with a 20mm connection).

¹³⁹ Source: Scottish Executive, Scottish Economic Statistics 2004, 2004, Table B1.2.

¹⁴⁰ This is taken from the Reporter's comments on Table B5.2W of Scottish Water's second draft business plan.

In its resubmitted business plan tables, volume changes projected by Scottish Water for customers with a bigger meter than 20mm are as follows:

- Consumption of less than or equal to 100,000m³ per year: increase of 1.6% from 2005-06 to 2009-10.
 This is around 0.4% per year.
- Consumption of greater than 100,000m³ but less than or equal to 250,000m³ per year: a decline of 3.4% from 2005-06 to 2009-10. This is around 0.9% per year.
- Consumption of greater than 250,000m³ per year: a 19.2% reduction between 2005-06 and 2009-10. This is around a 5.2% reduction per year.

Scottish Water's projections result in a decline in the volume that is consumed by customers with a meter bigger than 20mm of around 9,150 MI¹⁴¹. This is almost enough water for 82,000 households – or all of the households in the Renfrew Council area for a whole year.

As explained previously, Scottish Water did not update its projections for 2006-10 when it resubmitted its tariff multiplier tables. We have reviewed the evidence provided by Scottish Water and compared this with historical trends in England and Wales. From this, we have developed the following assumptions:

- Consumption of less than or equal to 100,000m³ per year: no change over the period.
- Consumption of greater than 100,000m³ but less than or equal to 250,000m³ per year: a decline of 1.4% per year.
- Consumption of greater than 250,000m³ per year: a decline of 1.8% per year.

This reduces the decline in water use to 4,100 MI.

We have assumed that each new non-household connection has the smallest possible (20mm) connection. We have also assumed that they consume the average volume of a current unmeasured customer.

We have made consistent assumptions for waste water.

Changes in the way in which non-household customers pay for water and waste water

In its second draft business plan, Scottish Water indicated that it intends to move to full metering by April 2010. However, it also said that it will not start charging customers on a metered basis until after 2010.

The impact of this assumption on the non-household customer base is set out in Table 11.21

Table 11.21: Projected measured and unmeasured non-household customers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10			
Water									
Metered	79,219	73,109	75,286	77,463	79,640	81,817			
Unmetered	54,272	48,210	48,210	48,210	48,210	48,210			
Total	133,491	121,319	123,496	125,673	127,850	130,027			
Waste water									
Metered	53,899	49,354	51,531	53,708	55,885	58,062			
Unmetered	51,384	45,547	45,547	45,547	45,547	45,547			
Total	105,283	94,901	97,078	99,255	101,432	103,609			

We have assumed that the meter profile of customers with meters larger than 25mm does not change during the 2006-10 regulatory control period¹⁴².

The effect of all of these changes on the customer base for 2004-05 to 2009-10 is summarised in Tables 11.22 and 11.23.

Table 11.22: Projection of unmeasured tariff multipliers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Water						
Number of connections	54,272	48,210	48,210	48,210	48,210	48,210
Rateable value	£472.7m	£425.3m	£425.3m	£425.3m	£425.3m	£425.3m
Waste water						
Number of connections	51,384	45,547	45,547	45,547	45,547	45,547
Rateable value	£465.1m	£418.4m	£418.4m	£418.4m	£418.4m	£418.4m

¹⁴¹ MI = Mega litres = 1,000,000 litres.

¹⁴² Scottish Water's rightsizing programme was targeted specifically at customers with a 40mm meter or greater. However, there has been considerable movement in the 25mm meter category, suggesting that many of these customers have also had their meter size changed.

Table 11.23: Projection of measured tariff multipliers

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Water						'
Number of meters						
20mm	68,623	69,324	71,501	73,678	75,855	78,032
Greater than 20mm	12,802	8,080	8,083	8,083	8,083	8,083
Total number of meters	81,425	77,404	79,584	81,761	83,938	86,115
Volumes (m³)						•
20mm meter, volumes less than or equal to 25m ³	1,445,000	1,485,000	1,539,435	1,593,860	1,648,285	1,702,710
20mm meter, volumes greater than 25m ³	30,315,000	30,365,000	30,031,284	31,697,446	32,363,608	33,029,770
Greater than 20mm meter, volumes less than or equal to 100,000m ³	56,121,078	55,536,656	55,536,656	55,536,656	55,536,656	55,536,656
Greater than 20mm meter, volumes of greater than 100,000m³ but less than or equal to 250,000 m³	11,615,413	10,697,991	10,560,446	10,424,669	10,290,637	10,158,329
Greater than 20mm meter, volumes of greater than 250,000m ³	52,360,370	50,288,304	49,383,115	48,494,219	47,621,323	46,764,139
Total volume	151,856,861	148,372,952	148,050,936	147,746,850	147,460,509	147,191,604
Sewage					•	•
Number of meters						
20mm	49,137	48,112	50,289	52,466	54,643	56,820
Greater than 20mm	7,222	3,257	3,257	3,257	3,257	3,257
Total number of meters	56,359	51,369	53,546	55,723	57,900	60,077
Volumes						•
20mm meter volumes less than or equal to 23.75m ³	977,446	1,024,946	1,030,793	1,082,497	1,134,201	1,185,904
20mm meter volumes greater than 23.75m ³	16,573,000	16,611,000	17,225,458	17,839,917	18,454,375	19,068,833
Volume discharged for all other meter sizes	26,140,126	24,874,650	24,656,480	24,442,090	24,231,412	24,024,382
Total volume discharged	43,690,572	42,510,596	42,912,732	43,364,503	43,819,987	44,279,120

Surface drainage charges

Surface drainage charges are split into property drainage charges and roads drainage charges. Both charges are based on a proportion of the rateable value of a customer's property. Both measured and unmeasured customers pay on the same basis. The total rateable value baseline for surface drainage is therefore unaffected by customers changing between having unmeasured and metered supplies.

We have assumed that each new property added in the 2006-10 regulatory control period has a surface drainage connection. We have also assumed that the rateable value base for each new connection is equal to the average rateable value in Scotland of £20,000 per year.

Projected surface drainage rateable values for property drainage and roads drainage are shown in Table 11.24.

Table 11.24: Rateable values for surface drainage 2004-05 to 2009-10

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Property Drainage	£2,595.5m	£2,403.4m	£2,446.9m	£2,490.4m	£2,534.0m	£2,577.5m
Roads Drainage	£2,714.6m	£2,513.7m	£2,557.2m	£2,600.8m	£2,644.3m	£2,687.8m

Trade effluent charges

Charges for trade effluent are based on the Mogden formula. This relates to the charge that the customer pays to the strength and volume of the customer's effluent discharge. Scottish Water has made a large downwards adjustment in its trade effluent customer

base for 2004-05 and 2005-06. We have accepted its adjustment and its assumptions on the change in the trade effluent customer base. Full details of the trade effluent customer tariff multipliers can be found in Appendix 13.

Table 11.25 presents a summary of the projected customer numbers and volumes.

Table 11.25: Projected customer numbers and volumes for trade effluent

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Number of customers						
Standard charges	719	1,171	1,448	1,593	1,802	1,802
Capped charges	1,084	631	354	209	0	0
Non-Mogden formula	70	70	67	67	67	67
Total	1,873	1,872	1,869	1,869	1,869	1,869
Volume of effluent (m³)						
Standard charges	7,753,770	12,481,247	17,939,466	18,695,987	19,265,129	18,301,873
Capped charges	14,743,288	9,281,346	3,406,938	1,583,096	0	0
Non-Mogden formula	unknown	unknown	unknown	unknown	unknown	unknown
Total (excluding non-Mogden formula)	22,497,058	21,762,593	21,346,404	20,279,084	19,265,129	18,301,873

Retail charge limits

The setting of individual charge limits is an iterative process. We have set charges in line with the Ministerial Guidance. Charges are set so that:

- total forecast revenue equals calculated allowed revenue;
- customers do not see rises of above inflation in any one year; and
- the £44 million of cross-subsidy has been unwound by the end of the regulatory control period.

The first stage of the process is to forecast annual revenue without any changes in charges. This is the revenue that arises from any underlying changes in the customer base. If forecast revenue were greater than the allowed level of revenue, there would have to be a fall in charges. The converse is also true.

We have forecast revenue for each year using 2005-06 tariffs. This is summarised in Table 11.26. We have divided our forecast into household and non-household customers to show the percentage from each customer group.

Table 11.26: Revenue projections with 2005-06 tariffs and comparison with allowed revenue

	2005-06	2006-07	2007-08	2008-09	2009-10	Percentage in 2009-10
Forecast household	£628.8m	£629.5m	£635.5m	£641.6m	£647.7m	65.8%
Forecast non-household	£322.7m	£326.7m	£330.1m	£333.9m	£336.3m	34.2%
Forecast primary	£951.5m	£956.2m	£965.6m	£975.5m	£984.0m	100%
Forecast secondary ¹⁴³	£13.6m	£13.9m	£14.2m	£14.6m	£15.0m	
Forecast core revenue	£965.1m	£970.1m	£979.9m	£990.1m	£999.0m	
Allowed revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m	

If forecast charges do not change, forecast revenue will be below the allowed for level of revenue in each year.

¹⁴³ Secondary revenue is assumed to increase at 2.5% (RPI) each year.

Table 11.26 also shows that the percentage of revenue that comes from household customers by 2009-10 is 65.8%. This would not unwind the £44 million cross subsidy. Retail charge increases for household customers will have to be higher than those for non-household customers.

The results of the tariff basket models are set out in Table 11.27. This table summarises the required nominal charge increase in each tariff basket to comply with the Ministerial guidance on the principles of charging.

Table 11.27: Required nominal charge increase for each tariff basket

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	2%	2%	0%	0%
Household unmeasured wastewater	2%	2%	0%	0%
Non-household unmeasured water	0%	0%	-2.1%	0%
Non-household unmeasured wastewater	0%	0%	-2.1%	0%
Measured water (with 25mm connection or greater)	0%	0%	-2.1%	0%
Measured wastewater (with 25mm connection or greater)	0%	0%	-2.1%	0%
Surface water drainage (excluding unmeasured domestic)	0%	0%	-2.1%	0%
Trade effluent	0%	0%	-2.1%	0%
Standard metered water connection (20mm)	0%	0%	-2.1%	0%
Standard metered wastewater connection (20mm)	0%	0%	-2.1%	0%
Overall weighted average price increase	1.3%	1.3%	-0.7%	0.0%

Table 11.27 shows that no household (except a second home owner) will face an increase in their water bill in real terms in any year of the regulatory control period. Similarly, all non-household customers who pay with reference to the charges scheme will not see a reduction in their bill in nominal terms over the regulatory control period.

The charge limits in Table 11.27 result in the revenue breakdown as shown in Table 11.28.

Table 11.28: Revenue breakdown implied by our retail charge limits

	2005-06	2006-07	2007-08	2008-09	2009-10	Percentage in 2009-10
Forecast household	£628.8m	£642.0m	£661.2m	£667.5m	£673.8m	67.2%
Forecast Non- household	£322.7m	£326.7m	£330.1m	£327.1m	£329.4m	32.8%
Forecast primary	£951.5m	£968.8m	£991.3m	£994.6m	£1,003.3m	100%
Forecast secondary	£13.6m	£13.9m	£14.2m	£14.6m	£15.0m	
Forecast core revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m	
Allowed revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m	

We explained in the previous chapter that we set real charge increases. We have decided to use the retail price index (RPI) as the inflation index for retail charge setting 144. This is the same index that Ofwat uses to set charge limits for the water and sewerage companies in England and Wales. Scottish Water therefore has the same protection against financing inflation risk as the water and sewerage companies in England and Wales.

Scottish Water is allowed to increase charges each year by the increase in RPI, plus a 'K' factor set by us. The K factor for each tariff basket against which we will monitor Scottish Water is shown in Table 11.29.

Table 11.29: The K factor for each tariff basket

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	-0.5%	-0.5%	-2.5%	-2.5%
Household unmeasured wastewater	-0.5%	-0.5%	-2.5%	-2.5%
Non-household unmeasured water	-2.5%	-2.5%	-4.6%	-2.5%
Non-household unmeasured wastewater	-2.5%	-2.5%	-4.6%	-2.5%
Measured water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Measured wastewater (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Surface water drainage (excluding unmeasured domestic)	-2.5%	-2.5%	-4.6%	-2.5%
Trade effluent	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered wastewater connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Overall weighted average price increase	-1.2%	-1.2%	-3.2%	-2.5%

¹⁴⁴ We use different charge indexes for different parts of the process. For example, we assess expected investment costs using the Construction Outputs Price Index (COPI) and operating cost increases using the Consumer Price Index (CPI). However, charge limits are set with reference to the retail price index (RPI).

Charge limits for Scottish Water's core wholesale business

In the previous section we described the retail charge limits that Scottish Water and its retail subsidiary are allowed to charge for household and non-household customers respectively. These limits are not affected by the introduction of the new competition framework.

We have also set limits on the amount that Scottish Water is allowed to charge retailers of non-household customers (including its own retail subsidiary). We refer to these as wholesale charges. We do not wish to pre-empt the market effects of competition on tariffs.

In Chapter 9 we explained how we have separately identified, for each year:

- · wholesale revenue; and
- retail revenue for:
 - household customers; and
 - non-household customers.

To calculate the allowed for wholesale non-household revenue we start with total allowed for revenue then subtract:

- total revenue collected from household customers:
- total secondary revenue; and
- the non-household retail margin.

This calculation is shown in Table 11.30.

Table 11.30: Allowed for revenue for wholesale businesses (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Total allowed revenue	£965.1m	£982.7m	£1,005.5m	£1,009.2m	£1,018.2m
Less: household revenue	£628.8m	£642.0m	£661.2m	£667.5m	£673.8m
Less: Secondary revenue	£13.6m	£13.9m	£14.2m	£14.6m	£15.0m
Less: non-household retail margin	£32.3m	£32.7m	£35.5m	£36.4m	£36.3m
Non-household wholesale revenue	£290.3m	£294.0m	£294.6m	£290.6m	£293.2m

There is no precedent within the UK water and sewerage industry for the setting of wholesale charges. We therefore believe that it is important that Scottish Water has the opportunity to decide how it wants to set its wholesale tariffs¹⁴⁵. We will therefore ask Scottish Water to identify wholesale tariffs as part of the scheme of charges process for 2006-07. These non-household wholesale charges should be consistent with the implied non-household wholesale revenue cap for 2005-06.

We consider that as the market develops, Scottish Water wholesale may wish to rebalance tariffs better to reflect the underlying costs. We have therefore set one K factor for the entire non-household wholesale business.

We have assumed that the annual percentage change in the wholesale customer base is the same as that for the combination of the wholesale and retail business (see Table 11.26). Table 11.31 forecasts total revenue for the wholesale business on the assumption that tariffs do not change.

Table 11.31: Forecast non-household wholesale revenue resulting from changes in the customer base (outturn prices)

	2005-06	2006-07	2007-08	2008-09	2009-10
Forecast non-household wholesale revenue	£322.7m	£326.7m	£330.1m	£333.9m	£336.3m
Percentage change		1.3%	1.0%	1.2%	0.7%

The calculation of non-household wholesale charge limits is shown in Table 11.32.

¹⁴⁵ Scottish Water did not provide any detailed information on its plan for wholesale tariffs in its second draft business plan.

Table 11.32: Non-household wholesale charge limits (outturn prices)

	2006-07	2007-08	2008-09	2009-10
Previous year revenue	£290.3m	£294.0m	£294.6m	£290.6m
Percentage change due to customer base changes	1.3%	1.0%	1.2%	0.7%
Revenue base for year	£294.0m	£297.0m	£298.0m	£292.8m
Allowed revenue	£294.0m	£294.6m	£290.6m	£293.2m
(Allowed revenue / Revenue base) minus 1	0.0%	-0.8%	-2.5%	0.1%
The K factor (subtract RPI)	-2.5%	-3.3%	-5.0%	-2.4%

We will monitor Scottish Water's compliance with the K factor using the tariff basket methodology that we outlined in Chapter 10.

Conclusions

Our charge limits meet all of the objectives outlined in the Ministerial Guidance, with the exception of the incentive to switch to a meter for higher banded households.

In particular, our charge limits are consistent with:

- harmonisation of charges across Scotland;
- the continuing link between household charges and Council Tax bands;
- customers that receive Council Tax relief having a new 25% discount on their charges; and
- rebalancing between non-household and household customer revenue of £44 million, achieved without any real increases and phased over the four year regulatory control period.

In addition, we have separately identified wholesale and retail charge limits. These limits will allow both businesses sufficient revenue to fund their efficient operation.

In Chapter 12 we explain how these charge limits will affect the standard customers that we use for illustrative purposes.

Section 4: Charges and their impact on customers Chapter 12: The impact of charge caps on customers' bills

Introduction

In the previous chapter we outlined the charge limits that will be applied to various customer groups. In this chapter we explain how these charge limits will affect the bills customers pay.

Scottish Water has around 2.3 million household customers and just over 120,000 non-household customers. Almost all household customers¹⁴⁶ pay on an unmeasured basis with reference to the Council Tax Band of their property.

Non-household (and metered household) customers require a different mix of services from Scottish Water. Tariff changes will impact on their bills in different ways. While we cannot project the impact of tariff changes on the bills of all such customers, we are keen to ensure that both the process and the outcome of this draft determination are as transparent as possible. We therefore use a series of standard customers to illustrate the effects of charge limits on customers' bills.

Standard customers

We first used standard customers in the Strategic Review of Charges 2002-06. At this time, information about customers was not as robust as we would have liked. Following the Review, it became clear that some of the standard customers were not particularly representative of Scottish Water's customer base. We explained this more fully in Volume 3 of our methodology consultation, where we proposed to update our standard customers in a number of ways:

- continuing with the standard customers we used previously, but updating the name of the customer to make it as representative as possible;
- adding smaller measured customers and a measured household;
- adding some unmeasured customers, which is a category that had been omitted from our previous list; and

 adding some trade effluent customers – we were not responsible for approving charges for trade effluent customers at the last Strategic Review, but the Water Services etc. (Scotland) Act 2005 makes this the responsibility of the new Water Industry Commission.

We further updated the standard customers in light of responses to our methodology consultation. We now believe that we have a representative set of standard customers. If customers compare their usage characteristics with that of the standard customers, it should prove easier to understand the likely impact of changes in tariffs on their bills.

The charge limits

In the previous chapter we explained that we set two sets of charge limits:

- · an overall level of wholesale charges; and
- a retail charge cap, set in relation to a number of tariff baskets

Each year Scottish Water or its Retail Subsidiary¹⁴⁷ will be allowed to increase its retail charges in line with inflation (measured using the retail price index), minus the 'K' factor that we have set in this draft determination. The overall charge caps we have set are shown in Table 12.1.

Table 12.1: Charge limits 2006-10 (nominal)

	2006,-07	2007-08	2008-09	2009-10
Household unmeasured water	2%	2%	0%	0%
Household unmeasured wastewater	2%	2%	0%	0%
Non-household unmeasured water	0%	0%	-2.1%	0%
Non-household unmeasured wastewater	0%	0%	-2.1%	0%
Measured water (with 25mm connection or greater)	0%	0%	-2.1%	0%
Measured wastewater (with 25mm connection of greater)	0%	0%	-2.1%	0%
Surface water drainage (excluding unmeasured domestic)	0%	0%	-2.1%	0%
Trade effluent	0%	0%	-2.1%	0%
Standard metered water connection (20mm)	0%	0%	-2.1%	0%
Standard metered wastewater connection (20mm)	0%	0%	-2.1%	0%
Overall weighted average charge increase	1.3%	1.3 %	-0.7%	0.0%

¹⁴⁶ About 400 household customers have a meter and pay for their water and sewerage service on this basis.

¹⁴⁷ We intend to make it a licence condition that the retail subsidiary of Scottish Water is bound by the retail price caps that are set in the final determination.

We show the effects of our retail charge limits on our standard customers based on our assumptions of inflation.

Table 12.2: The RPI-X charge cap

	2006-07	2007-08	2008-09	2009-10
Household unmeasured water	-0.5%	-0.5%	-2.5%	-2.5%
Household unmeasured waste water	-0.5%	-0.5%	-2.5%	-2.5%
Non-household unmeasured water	-2.5%	-2.5%	-4.6%	-2.5%
Non-household unmeasured waste water	-2.5%	-2.5%	-4.6%	-2.5%
Measured water (with 25mm connection or greater)	-2.5%	-2.5%	-4.6%	-2.5%
Measured waste water (with 25mm connection of greater)	-2.5%	-2.5%	-4.6%	-2.5%
Surface water drainage (excluding unmeasured domestic)	-2.5%	-2.5%	-4.6%	-2.5%
Trade effluent	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Standard metered waste water connection (20mm)	-2.5%	-2.5%	-4.6%	-2.5%
Overall weighted average price increase	-1.2%	-1.2%	-3.2%	-2.5%

These charge limits apply to the average of a basket of tariffs. There are specific rules about the balance of tariffs within each basket. Scottish Water is allowed to rebalance tariffs only if it can demonstrate that a change in the balance of tariffs would be more cost reflective. Such a rebalancing of tariffs within a tariff basket could mean that some customers will face an increase in their bill which is greater than the appropriate tariff basket charge cap.

Unmeasured household customers

Household customers pay an amount that depends on the Council Tax Band of their home, it does not depend on their consumption of water or discharge of waste water.

We use the Band D charge because it is the reference point for Council Tax charging. It is higher than the average charge, which sits between Band B and Band C.

Table 12.3 shows the change in the Band D charge implied by our charge caps. This assumes that retail price inflation is 2.5% per year.

Table 12.3: Nominal Band D charge 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Water	£163.26	£166.53	£169.86	£169.86	£169.86
Waste water	£184.50	£188.19	£191.95	£191.95	£191.95
Total	£347.76	£354.72	£361.81	£361.81	£361.81

Table 12.4 shows the change in the average charge implied by our price caps. Again this assumes that RPI is in line with our forecast of 2.5%

Table 12.4: Nominal average charge 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Water	£137.30	£139.29	£142.46	£142.82	£143.19
Waste water	£153.75	£155.81	£159.37	£159.82	£160.26
Total	£291.05	£295.10	£301.83	£302.64	£303.44

Measured household customers

Fewer than 1% of household customers have a meter. These customers pay a fixed charge based on the size of their meter connection and a volumetric rate based on how much water they consume. All household metered water customers currently have a standard 20mm connection. This is the smallest connection available.

We demonstrate the effects of our charge limits on measured households using the 'large house' standard customer. This customer uses 110m³ of water per year, discharges 104m³ of sewage and is a Council Tax Band H property (the basis for surface drainage charges).

The bill for our large house standard customer in 2005-06 is £652.85. Table 12.5 shows the change in the bill of our large house standard customer implied by our price caps. Again, we assume that the increase in the retail price index each year is 2.5%.

Table 12.5: Large house standard customer nominal bills 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Water	£231.46	£231.46	£231.46	£226.59	£226.59
Sewerage	£273.79	£273.79	£273.79	£268.04	£268.04
Surface water drainage	£147.60	£147.60	£147.60	£144.50	£144.50
Total	£652.85	£652.85	£652.85	£639.14	£639.14

Table 12.7 shows the impact of the price caps on unmeasured non-domestic standard customers' bills from 2005-06 to 2009-10. Again, RPI is assumed to be 2.5%.

Unmeasured household customers

Unmetered non-household customers pay for their water and sewerage service relative to the rateable value of their property. They pay two fixed charges for water, neither of which reflects their consumption: a minimum charge for access to the network and an additional charge that is a proportion of their rateable value. They pay three separate fixed charges for waste water: a minimum charge for accessing the network and two charges that are a proportion of their rateable value. One covers waste water and the second covers surface water and roads drainage

We illustrate the effect of our charge caps on unmeasured non-household customers with four separate standard customers, These are shown in Table 12.6.

Table 12.6: Standard unmeasured non-domestic customers

Customer name	Rateable value		
Small newsagent /grocer	£200		
Local hairdresser	£920		
Sports club	£2,250		
Supermarket	£30,000		

Three separate tariff baskets affect unmeasured nondomestic customers. These are:

- non-household unmeasured water;
- non-household waste water; and
- surface water drainage.

Table 12.7: Unmeasured non-household standard customer nominal bills 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
	2005-00	2000-07	2007-00	2000-09	2009-10
Small newsagent/grocer					
Water	£141.55	£141.55	£141.55	138.58	£138.58
Sewerage	£155.18	£155.18	£155.18	£151.92	£151.92
Surface water drainage	£7.34	£7.34	£7.34	£7.19	£7.19
Total	£304.07	£304.07	£304.07	£297.68	£297.68
Local hairdresser					
Water	£160.41	£160.41	£160.41	£157.05	£157.05
Sewerage	£185.35	£185.35	£185.35	£181.46	£181.46
Surface water drainage	£33.76	£33.76	£33.76	£33.05	£33.05
Total	£379.53	£379.53	£379.53	£371.56	£371.56
Sports club					
Water	£195.26	£195.26	£195.26	£191.16	£191.16
Sewerage	£241.08	£241.08	£241.08	£236.01	£236.01
Surface water drainage	£82.58	£82.58	£82.58	£80.84	£80.84
Total	£518.91	£518.91	£518.91	£508.01	£508.01
Supermarket	•		•		
Water	£922.31	£922.31	£922.31	£902.94	£902.94
Sewerage	£1,403.80	£1,403.80	£1,403.80	£1,374.32	£1,374.32
Surface water drainage	£1,101.00	£1,101.00	£1,101.00	£1,077.88	£1,077.88
Total	£3,427.11	£3,427.11	£3,427.11	£3,355.14	£3,355.14

The bills shown in Table 12.7 take no account any better deals that competition may bring.

Measured non-household customers

Metered non-household customers pay a standing charge that depends on the size of their meter connection, and a volumetric charge based on how much water they consume. Non-household measured water customers with a standard 20mm connection are charged in the same way as metered household customers for water.

Larger meter connection sizes range from 25mm to 600mm. Annual water consumption up to 100,000m³ is charged at the standard 20mm volumetric rate. Customers who use in excess of 100,000m³ of water during the year receive a discount from the standard volumetric tariff for any consumption above the 100,000m³ threshold. A second increased discount applies above 250,000m³. Customers who commit in

advance to using a minimum amount of water can obtain a larger discount on their consumption over 100,000m³ and 250,000m³.

Non-household waste water customers pay a fixed charge based on the size of their water meter connection and a volumetric rate based on an assumption that 95% of their water consumption is returned to sewer.

The surface water drainage charge for non-household customers, whether metered or unmetered, is based on the rateable value of their properties.

We illustrate the effects of our charge limits on measured non-household customers using 13 separate standard customers. These are set out in Table 12.8.

Table 12.8: Standard measured non-household customers

Name	Water		Sewerage		
	Meters (no x size (mm))	Volume (m³)	Meters (no x size (mm))	Volume (m³)	Rateable value
Warehouse	1 x 20	10	1 x 20	9	£500
High school	1 x 25	2,000	1 x 25	1,900	£18,000
Hotel	1 x 50	15,000	1 x 50	14,250	£75,000
Convenience store	1 x 20	30	1 x 20	28.5	£5,000
Garage	1 x 20	100	1 x 20	95	£10,000
Large restaurant	1 x 20	500	1 x 20	475	£100,000
Large office	1 x 25	900	1 x 25	855	£750,000
Retail group	2 x 20 20 x 25 1 x 35	4,500	2 x 20 20 x 25 1 x 35	4,275	£1,700,000
Food manufacturer 1	2 x 25 1 x 80	50,000	2 x 25 1 x 80	47,500	£100,000
Food manufacturer 2	2 x 25 1 x 50 1 x 100	100,000	2 x 25 1 x 50 1 x 100	95,000	£260,000
Large manufacturer	1 x 150	175,000	1 x 150	166,250	£1,225,000
Brewers	2 x 25 1 x 100 1 x 150	600,000	2 x 25 1 x 100 1 x 150	150,000	£500,000

The bills of measured non-household customers are affected by five separate tariff baskets. They are:

- standard metered water 20mm;
- standard metered waste water 20mm;
- measured water with 25mm connection or greater;
- measured waste water with 25mm connection of greater; and
- surface water drainage.

Table 12.9 shows the impact our charge caps on measured non-household standard customers' bills from 2005-06 to 2009-10, assuming that RPI is 2.5%.

Table 12.9: Measured non-domestic standard customer nominal bills 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Warehouse		T			
Vater	£142.73	£142.73	£142.73	£139.73	£139.73
Sewage	£145.30	£145.30	£145.30	£142.25	£142.25
Surface Water Drainage	£18.35	£18.35	£18.35	£17.96	£17.96
Total	£306.38	£306.38	£306.38	£299.95	£299.95
High School					
Water	£1,771.00	£1,771.00	£1,771.00	£1,733.81	£1,733.81
Sewage	£2,557.70	£2,557.70	£2,557.70	£2,503.99	£2,503.99
Surface Water Drainage	£660.60	£660.60	£660.60	£646.73	£646.73
Total	£4,989.30	£4,989.30	£4,989.30	£4,884.52	£4,884.52
Hotel		1			
Water	£12,837.00	£12,837.00	£12,837.00	£12,567.42	£12,567.42
Sewage	£18,737.25	£18,737.25	£18,737.25	£18,343.77	£18,343.77
Surface Water Drainage	£2,752.50	£2,752.50	£2,752.50	£2,694.70	£2,694.70
Total	£34,326.75	£34,326.75	£34,326.75	£33,605.89	£33,605.89
Convenience store		I	1		
Water	£175.30	£175.30	£175.30	£171.61	£171.61
Sewage	£186.74	£186.74	£186.74	£182.82	£182.82
Surface Water Drainage	£183.50	£183.50	£183.50	£179.65	£179.65
Total	£545.53	£545.53	£545.53	£534.08	£534.08
Garage		T			
Water	£224.44	£224.44	£224.44	£219.72	£219.72
Sewage	£263.41	£263.41	£263.41	£257.88	£257.88
Surface Water Drainage	£367.00	£367.00	£367.00	£359.29	£359.29
Total	£854.85	£854.85	£854.85	£836.90	£836.90
Large restaurant					
Water	£505.24	£505.24	£505.24	£494.63	£494.63
Sewage	£701.55	£701.55	£701.55	£686.82	£686.82
Surface Water Drainage	£3,670.00	£3,670.00	£3,670.00	£3,592.93	£3,592.93
Total	£4,876.79	£4,876.79	£4,876.79	£4,774.38	£4,774.38
1					
Large office	0000.00	0000 00	0000 00	0077.00	0077.00
Water	£998.80	£998.80	£998.80	£977.83	£977.83
Sewage	£1,352.82	£1,352.82	£1,352.82	£1,324.41	£1,324.41
Surface Water Drainage	£27,525.00	£27,525.00	£27,525.00	£26,946.98	£26,946.98
Total	£29,876.62	£29,876.62	£29,876.62	£29,294.21	£29,249.21
Retail group		A		A.1. Z	
Water	£11,845.47	£11,845.47	£11,845.47	£11,596.72	£11,596.72
Sewage	£13,614.83	£13,614.83	£13,614.83	£13,328.92	£13,328.92
Surface Water Drainage	£62,390.00	£62,390.00	£62,390.00	£61,079.81	£61,079.81
Total	£87,850.30	£87,850.30	£87,850.30	£86,005.45	£86,005.45

Table 12.9: Measured non-domestic standard customer nominal bills 2005-06 to 2009-10 (cont.)

	2005-06	2006-07	2007-08	2008-09	2009-10
Food manufacturer 1					
Water	£42,545.00	£42,545.00	£42,545.00	£41,651.56	£41,651.56
Sewage	£62,212.50	£62,212.50	£62,212.50	£60,906.04	£60,906.04
Surface Water Drainage	£3,670.00	£3,670.00	£3,670.00	£3,592.93	£3,592.93
Total	£108,427.50	£108,427.50	£108,427.50	£106,150.52	£106,150.52
				1	
Food manufacturer 2					
Water	£87,397.00	£87,397.00	£87,397.00	£85,561.66	£85,561.66
Sewage	£126,732.00	£126,732.00	£126,732.00	£124,070.63	£124,070.63
Surface Water Drainage	£9,542.00	£9,542.00	£9,542.00	£9,341.62	£9,341.62
Total	£223,671.00	£223,671.00	£223,671.00	£218,973.91	£218,973.91
				1	
Large manufacturer					
Water	£144,094.00	£144,094.00	£144,094.00	£141,068.03	£141,068.03
Sewage	£232,580.25	£232,580.25	£232,580.25	£227,696.06	£227,696.06
Surface Water Drainage	£44,957.50	£44,957.50	£44,957.50	£44,013.39	£44,031.39
Total	£421,631.75	£421,631.75	£421,631.75	£412,777.48	£412,777.48
			'		1
Brewers					
Water	£331,984.00	£331,984.00	£331,984.00	£325,012.34	£325,012.34
Sewage	£228,734.00	£228,734.00	£228,734.00	£223,930.59	£223,930.59
Surface Water Drainage	£18,350.00	£18,350.00	£18,350.00	£17,964.65	£17,964.65
Total	£579,068.00	£579,068.00	£579,068.00	£566,907.57	£566,907.57

Trade effluent

Trade effluent customers pay an annual fixed charge on the basis of expected discharge of effluent and a variable rate based on the actual volume and strength of the effluent discharged.

In simple terms, the Mogden formula has four variables:

R (Reception) – this part of the formula is designed to cover the cost of the waste water system. The charge is in direct proportion to the volume of the discharge.

V (Volumetric costs) – this part of the formula covers costs for preliminary and primary treatment. It takes account of the amount of suspended solids in the discharge.

S (Solids costs) – this part of the formula covers costs for treating the sludge resulting from primary treatment.

It takes account of suspended solids in the discharge.

B (Biological costs) – this part of the formula covers costs for secondary treatment. It takes account of the organic load in the discharge.

The basic Mogden formula is: Charge = R+V+ α S+ β B. It is widely used both in Britain and internationally.

The price of trade effluent will therefore vary depending on the type of discharge. It will also vary depending on the sewerage company's prices for each of the four elements of trade effluent collection and treatment.

Scottish Water uses two derivatives of the basic Mogden formula to assess the standing charge and the volumetric charge.

To assess the volumetric charge, Scottish Water uses

the following formula:

 $Co = [Ro + Vo + Bo \times (Ot/Os) + So \times (St/Ss)] \times AVD$

Where:

Ro = reception charge (pence per cubic metre)

Vo = volumetric charge (pence per cubic metre)

Bo = biological/secondary treatment charge (pence per cubic metre)

So = sludge/solid treatment charge (pence per cubic metre)

Ss = average total suspended solids for the Scottish sewerage system

Scottish Average Sewerage System

Os = average settled chemical oxygen demand (COD) for the Scottish sewerage system

Ss = average total suspended solids for the Scottish sewerage system

AVD = Actual volume discharged

Ot = fixed strength of trade effluent discharged

St = fixed strength of trade effluent discharged

The formula assesses the volumetric charge based on the actual volume and strength of the trade effluent discharged. Ro, Vo, Bo and So are all charge factors (pence per cubic metre) set by Scottish Water. The factor Ot/Os reflects the relative COD or biological treatment needed by the trade effluent in comparison with the system average.

The factor St/Ss reflects the discharged trade effluent's required treatment of solids relative to the system average.

Scottish Water assesses the standing charge using the following derivative of the Mogden formula:

 $Ca = [CDV \times (Ra+Va) + (Ba \times sBODI) + (Sa \times TSSI)] \times 365$

Where:

Ra = reception charge (pence per cubic metre per day)

Va = volumetric/primary charge (pence per cubic metre per day)

Ba = biological/secondary capacity charge (pence per kilogram of load per day)

Sa = sludge/solid capacity charge (pence per kilogram of load per day)

CDV = consented daily volume according to the trade effluent consent

sBODI = settled biochemical oxygen demand load according to the trade effluent consent

TSSI = total suspended solids load according to the trade effluent consent

It is more difficult to define standard trade effluent customers than it is to define water customers or customers who discharge standard-strength sewage. There are just over 2,000 customers in Scotland who have trade effluent agreements. Scotlish Water uses 31 different categories to group these customers and their size can range from a small garage to a large petrochemical firm.

Because of this, the aim in developing standard customers for trade effluent is not to represent all trade effluent customers. However, we hope to indicate the types of industries that have trade effluent agreements, and to show different varieties of strength and volume and different sizes of customer.

We use six standard customers for trade effluent. These are shown in Table 12.10.

Table 12.10: Trade effluent standard customers

Name	Volume		Load		Average strengths	
	Annual (m³)	Daily (m³)	Total suspended solids (kg/day)	Biological oxygen demand (kg/day)	Total suspended solids (mg/l)	Settled chemical oxygen demand (mg/l)
Bakery	200	0.55	0.5	0.75	575	1,600
Clothing manufacturer	12,000	32.9	1	1	20	300
Abattoir	90,000	246.6	150	250	600	1,500
Electronics business	550,000	1,507	15	50	10	75
Printers	10,000	27.4	5	40	100	2,500
Distillery	150,000	411.0	7	55	15	200

Trade effluent customers are impacted only by the charge cap on our trade effluent tariff basket.

Table 12.11 shows the effect on total bills of our charge caps on trade effluent prices. We assume that retail price inflation is 2.5%.

Table 12.11: Bills for trade effluent standard customers (nominal) 2005-06 to 2009-10

	2005-06	2006-07	2007-08	2008-09	2009-10
Bakery	£294.24	£294.24	£294.24	£288.06	£288.06
Clothing manufacturer	£5,560.53	£5,560.53	£5,560.53	£5,443.76	£5,443.76
Abattoir	£118,796.65	£118,796.65	£118,796.65	£116,301.92	£116,301.92
Electronics business	£211,029.12	£211,029.12	£211,029.12	£206,597.51	£206,597.51
Printers	£15,240.28	£15,240.28	£15,240.28	£14,920.23	£14,920.23
Distillery	£67,163.59	£67,163.59	£67,163.59	£65,753.15	£65,753.15

If we assume that tariffs in England and Wales change in line with the price caps set by Ofwat (and inflation is 2.5%), we can estimate the bill paid by our standard customers in England and Wales in 2009-10.

Table 12.12: Effects on trade effluent standard customers' bills 2005-06 to 2009-10

Customer name	Scottish Water 2009-10 projected	Lowest England and Wales (2009-10)	Highest England and Wales (2009-10)	Median England and Wales 2009-10	Average England and Wales (2009-10)
Bakery	£288.06	£191.68	£798.61	£311.45	£368.89
Clothing manufacturer	£5,443.76	£3,711.87	£19,129.64	£8,755.60	£9,500.60
Abattoir	£116,301.92	£80,060.08	£350,127.69	£122,237.66	£153,151.40
Electronics business	£206,597.51	£114,933.05	£705,613.13	£280,686.09	£355,420.81
Printers	£14,920.24	£10,547.16	£46,155.38	£15,999.20	£20,494.01
Distillery	£65,753.16	£41,232.13	£218,272.91	£82,427.68	£102,633.48

Overall effects on bills of charge limits

Table 12.13 summarises the impact of our charge caps on each of our standard customers.

Table 12.13: Effects on all standard customers' bills 2005-06 to 2009-10

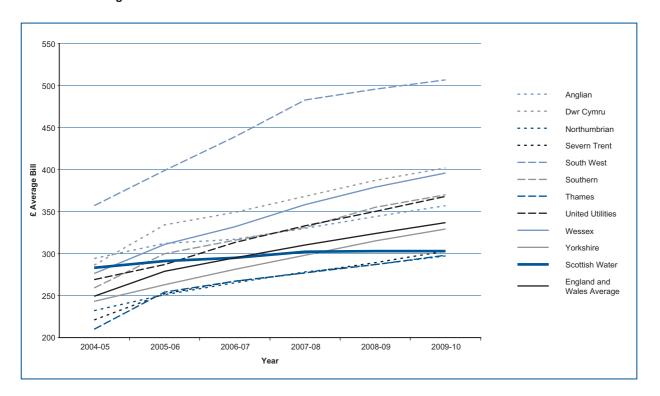
Customer name	Customer type	Total bill 2005-06	Nominal bill 2009-10	% change in nominal bill
Band D unmeasured household	Unmeasured domestic	£347.76	£361.81	4.04%
Large house	Measured domestic	£652.85	£639.14	-2.10%
Small newsagent/grocer	Unmeasured non-domestic	£304.07	£297.68	-2.10%
Local hairdresser	Unmeasured non-domestic	£379.53	£371.56	-2.10%
Sports club	Unmeasured non-domestic	£518.91	£508.01	-2.10%
Supermarket	Unmeasured non-domestic	£3,427.11	£3,355.14	-2.10%
Warehouse	Measured non-domestic	£306.38	£299.95	-2.10%
High school	Measured non-domestic	£4,989.30	£4,884.52	-2.10%
Hotel	Measured non-domestic	£34,326.75	£33,605.89	-2.10%
Convenience store	Measured non-domestic	£545.53	£534.08	-2.10%
Garage	Measured non-domestic	£854.85	£836.90	-2.10%
Large restaurant	Measured non-domestic	£4,876.79	£4,774.38	-2.10%
Large office	Measured non-domestic	£29,876.62	£29,249.21	-2.10%
Retail group	Measured non-domestic	£87,850.30	£86,005.45	-2.10%
Food manufacturer 1	Measured non-domestic	£108,427.50	£106,150.52	-2.10%
Food manufacturer 2	Measured non-domestic	£223,671.00	£218,973.91	-2.10%
Large manufacturer	Measured non-domestic	£421,631.75	£412,777.48	-2.10%
Brewers	Measured non-domestic	£579,068.00	£566,907.57	-2.10%
Bakery	Trade effluent	£ 294.24	£ 288.06	-2.10%
Clothing manufacturer	Trade effluent	£5,560.53	£5,443.76	-2.10%
Abattoir	Trade effluent	£118,796.65	£116,301.92	-2.10%
Electronics business	Trade effluent	£211,029.12	£206,597.51	-2.10%
Printers	Trade effluent	£15,240.28	£14,920.24	-2.10%
Distillery	Trade effluent	£67,163.59	£65,753.16	-2.10%

Conclusion

In this chapter we have explained the effects that our charge limits will have on standard customers.

We can compare the projected average domestic charge for 2006-10 for each of the water and sewerage companies in England and Wales and compare this to Scottish Water's average domestic bill. This comparison is shown in Figure 12.1. It shows that by 2009-10, average bills in Scotland will be amongst the lowest in the UK.

Figure 12.1: Comparison of household bills in Scotland and England and Wales 2006-10¹⁴⁸



Customers in Scotland are now beginning to see the benefits of access to public sector capital, the financial discipline that we began to enforce at the last Review and most importantly the progress by Scottish Water in improving its efficiency.

We trust that Scottish Water will continue to build on its recent improvements.

¹⁴⁸ Scottish Water benefits from the lower cost of capital. Customers would likely pay a little more if the level of service provided in Scottand was the same (in all respects) as in England and Wales.

Section 4: Charges and their impact on customers Chapter 13: Outlook for 2010 to 2014

Introduction

In this chapter, we outline the prospects for customer charges at the next Strategic Review of Charges, which is likely to cover the period 2010-14.

Charges increased dramatically in the period between 1996 and 2004. However, during the last two years of the 2002-06 regulatory control period real charge increases have been much more modest.

In this draft determination we set out our analysis of the scope for Scottish Water to reduce its costs further and improve its level of services to customers. We have adopted the same approach to assessing the scope for improvement as Ofwat and, as a result, Scottish Water has the same opportunity to out-perform the targets that we have set as a company south of the border has to out-perform Ofwat's price determination. We have developed incentive-based regulation to ensure that Scottish Water faces a consistent tight budget constraint, but that there is mechanism to adjust charges if management face cost pressures that are outside their control.

We believe that by 2010 Scottish Water could have further narrowed the gap in operating cost and capital efficiency between itself and the companies in England and Wales. However, it is still likely that Scottish Water will have some scope to improve both its relative and absolute efficiency further in the 2010-14 regulatory control period.

Prospects for charges

In the 2006-10 regulatory control period no group of non-household customers that is currently paying tariffs within Scottish Water's scheme of charges will face a real increase in the tariffs they pay. All household customers (except second home owners and some who benefitted from transitional relief) will similarly see a reduction in their tariffs in real terms.

We have set indicative charge caps for the period 2010-14. These charge caps are broadly in line with retail price inflation. The indicative charge caps are set out in Table 13.1.

Table 13.1: Indicative charge caps for 2010-14

Year	2010-11	2011-12	2012-13	2013-14
K Factor ¹⁴⁹	0.0%	0.0%	0.0%	0.1%

These charge caps have assumed:

- Scottish Water hits, but does not beat, its targets for the 2006-10 regulatory control period;
- An investment programme of £1,800 million in 2003-04 prices;
- · Capital inflation of 3%;
- · No change in the key financial ratios; and
- Borrowing from the public sector (public expenditure) of £182 million per year is available.

The actual charge caps for 2010-2014 will depend on Scottish Water's performance in the regulatory control period and on decisions of the Scottish Ministers with regard to their investment objectives and the level of public expenditure that they are prepared to make available.

We have modelled a number of different scenarios. These are set out in Table 13.2.

Table 13.2: Future charge caps scenarios

Level of investment (2003-04 prices)	£1,700 million £1,800 million £1,900 million £2,000 million £2,100 million £2,200 million
Public expenditure	Limited to £182 million nominal Unlimited
Change in targeted key financial ratios	No change One or more ratios may fail
Capital expenditure inflation	• 3% • 2%

Prospects for investment

The Quality and Standards consultation document, issued by the Scottish Executive, highlighted the need for continuing investment in the water industry. In this draft

¹⁴⁹ Adjustment in tariff basket income relative to the rate of retail price inflation

determination we have been able to consider carefully the level of investment that is required to deliver both the 'essential' and the 'desirable' objectives set out by Ministers. Our move towards the regulatory capital value method of setting charges has ensured that in the 2010-14 regulatory control period, customers will meet the costs of the level of service they receive.

The main drivers of investment in the 2010-14 regulatory control period are likely to include:

- · improving customer service;
- the Water Framework Directive;
- lead standards;
- · revisions to the Bathing Waters Directive;
- disposal of sludge; and
- better management of drainage and sewerage systems.

It is not clear what level of investment is likely to be required. We have therefore modelled a range of scenarios from £1,700 million to £2,200 million in 2003-04 prices. We set out our results in Tables 13.3 and 13.4. Table 13.3 assumes that capital inflation is 2%, in line with consumer price inflation. Table 13.4 assumes that capital expenditure inflation runs at 3%. The same charge cap is applied in each year of the regulatory control period.

Table 13.3: Indicative real annual charge caps for 2010-14 (COPI =2%)

	Compliant with financial ration		Does not comply with funds from operations		
Investment in 2003-04 prices ¹⁵⁰	Public expenditure fixed at £182 m a year	No Limit	Public expenditure fixed at £182 m a year	No Limit	
£1,700 million	-0.4%	-0.4%	-4.3%	-4.3%	
£1,800 million	-0.1%	-0.1%	-4.0%	-4.0%	
£1,900 million	+0.3%	+0.3%	-3.5%	-3.8%	
£2,000 million	+0.6%	+0.6%	-2.2%	-3.6%	
£2,100 million	+1.0%	+1.0%	-0.7%	-3.4%	
£2,200 million	+1.3%	+1.3%	+0.9%	-3.2%	

¹⁵⁰ Percentages rounded to one decimal place.

Table 13.4: Indicative real annual charge caps for 2010-14 (COPI =3%)

	Compliant with financial rat		Does not comply with funds from operations ratio		
Investment in 2003-04 prices	Public expenditure fixed at £182 m a year	No Limit	Public expenditure fixed at £182 m a year	No Limit	
£1,700 million	-0.3%	-0.3%	-4.1%	-4.1%	
£1,800 million	+0.0%	+0.0%	-3.9%	-3.9%	
£1,900 million	+0.4%	+0.4%	-2.9%	-3.7%	
£2,000 million	+0.7%	+0.7%	-1.5%	-3.5%	
£2,100 million	+1.1%	+1.1%	+0.1%	-3.3%	
£2,200 million	+1.7%	+1.5%	+1.7%	-3.0%	

The challenges ahead

There are considerable challenges during the current regulatory control period. These include delivering further much needed improvement in operating cost and capital expenditure efficiency targets and a large investment programme. The introduction of the new framework for competition in non-household retail services also represents a major challenge for Scottish Water's retail subsidiary. Scottish Water will need to develop an appropriate relationship with retail new entrants, who will, in effect, represent a small number of demanding customers.

The challenges for Scottish Water in the following review period (ie 2010-14) will be similar in some ways. It is always more challenging to close the last elements of any efficiency gap. The focus of the investment programme may well have changed slightly; there will be greater focus on understanding the condition and performance of the underground infrastructure to ensure that customers receive a reliable water supply. This will require a much greater reliance on performance information than has previously been the case. This information takes time to collect and interpret so it is important that the management of the industry allocates sufficient resources to it now.

Greater efficiency

Our expectation is that Scottish Water will close a further 60% of the gap between its own performance and that of the frontier companies in England and Wales. In its final determinations, Ofwat noted that it believed the scope for improvement in the frontier companies was 0.8% (water service) to 1.0% (sewerage service)% a year. Ofwat's recent final determinations of price have assumed that frontier companies south of the border improve their performance by 0.3% (water service) to 0.5% (sewerage service) a year. Table 13.5 illustrates the likely efficiency gap between Scottish Water and the frontier companies in 2010.

Table 13.5: Analysis of remaining operating expenditure efficiency gap in 2009-10

Total out- performance	% cost reduction needed to match comparator companies, depending on extent of gap closure by Scottish Water						
of Ofwat target by frontier companies	60% gap closure	70% gap closure	80% gap closure	90% gap closure	100% gap closure	110% gap closure	
0%	14%	11%	7%	4%	0%	-4%	
5%	18%	15%	12%	9%	5%	1%	
10%	22%	20%	17%	13%	10%	6%	

The largest single threat to the survival of the water industry in the public sector is its inefficiency. Continuing to build on the substantial progress of the current regulatory control period is therefore of the highest priority.

Retail competition

Retail competition will offer a choice to most non-household customers in Scotland from 2008. This is likely to lead to a quite marked improvement in customer service and almost certainly to more flexibility in methods of payment. It may even lead to some limited reductions in bills for some customers.

This need not threaten Scottish Water. If customer service is improved and if wholesale tariffs are made broadly cost reflective then the impact on Sottish Water's total revenues will be minimal. Scottish Water's retail subsidiary will have to ensure that it maintains as flexible a cost base as possible. In particular, it would seem prudent to avoid increasing its proportion of fixed costs.

Conclusion

We believe that this draft determination for 2006-10 offers customers reassurance that price stablility is not being achieved at the cost of future large increases in bills. There should not be a need for large real increases in water and sewerage bills unless there is a further very large increase in the investment programme.

In preparing this draft determination, we have drawn on the work of the Office of Water Services in England and Wales.

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The Strategic Review of Charges 2006-10:

The draft determination

Appendices

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Appendix 1 Glossary of terms and definitions

Appendix 1

Glossary of terms and definitions

Annual Return: The Annual Return is the largest single information request that we issue to Scottish Water each year. The format of the Annual Return is based closely on Ofwat's June Return. The Return provides detailed information about each area of the water and waste water business and all associated costs. It comprises more than 20,000 items of both input and calculated information.

Amortisation: An annual charge taken through the Income and Expenditure account to allow for the fall in value of an intangible asset. This is similar to depreciation, but for intangible assets.

Asset lifecycle: The period from when an asset is purchased to when it is decommissioned.

Benchmarking comparison: A method of comparing the performance of different companies. The leading performers in a given area are used as a standard or benchmark for the others.

Better Regulation Task Force: This independent body advises Government on action to ensure that regulation, and its enforcement, accord with the five Principles of Good Regulation. The Better Regulation Task Force has recommended that regulators adopt five principles of good regulation in their approach to price setting: proportionality, accountability, consistency, transparency and targeting.

BOD: Biological oxygen demand – a measure of the pollution potential of raw sewage and treated sewage effluent.

Business plan: A business plan is a company or organisation's statement of its strategy for the future. It should present clearly its forecast of revenue and costs. Scottish Water's two business plan submissions supplemented the information contained in the standard regulatory returns and set out its strategy and objectives for the coming period. The business plans formed a key element of the Strategic Review of Charges.

Capital asset pricing model (CAPM): An economic model used to provide an estimate of the expected rate of return on a financial investment, based on the riskiness of that investment.

Capital maintenance: Planned work carried out by Scottish Water to replace and repair water and sewerage assets to provide continuing services to customers.

Capital programmes: Planned construction work carried out by Scottish Water to build new assets such as sewage treatment works and water mains.

Cash flow statement: A summary of the cash flows in and out of a company over time.

Cash return on RCV: The RCV approach separates the cash cost of replacing assets (depreciation) from the financing and management costs. These financing costs and management costs are the cash return on the regulatory capital value.

Charge cap: A limit on the charges that Scottish Water can charge to customers.

Charge determination or determination: In relation to Scottish Water, a determination (made by the Water Industry Commission under section 29B of the 2002 Act (as amended by the 2005 Act)) as to the maximum amounts of charges by reference to which a charges scheme is to be made.

Charges scheme: Sets out Scottish Water's charging policy and charge levels for each financial year. It is subject to approval by the Commissioner.

Charging year: The year commencing on 1 April.

Codes of Practice: Scottish Water has an obligation to produce a Code of Practice under section 26 of the Water Industry (Scotland) Act 2002. The Code of Practice provides information on the standards of service that customers can expect and on how Scottish Water will deal with customers.

Competition Commission: The Commission is an independent public body established by the Competition Act 1998. It conducts inquiries into mergers, markets and the regulation of major regulated industries. If a regulated company disputes the regulator's price limits, it can require the regulator to refer the determination to the Commission.

Common carriage: An approach to competition where competing suppliers put their water into the public supply network in order to supply their customers.

The Convenor: The Convenor of the Customer Panels, a role established by the Water Industry (Scotland) 2002 Act. The Convenor is the head of the five Water Customer Consultation Panels.

COPI: Construction Outputs Price Index. The rate of inflation that applies to a basket of construction prices over a period of time.

Cost base: A set of standard capital unit costs, designed to reflect the actual work to be carried out by Scottish Water. These can be benchmarked in order to assess a procurement efficiency gap.

Comparative analysis: The use of a number of different organisations' performance in a given area to assess relative performance of an individual organisation.

Comparator company: A company used as a benchmark, against which Scottish Water's performance is assessed.

Core activities: Scottish Water's primary role is to provide water and waste water services to customers. The Water Industry (Scotland) Act 2002 limits our remit to promoting the interests of customers to the core business.

Cost-reflective pricing: Where charges are based on the cost to the service provider of actually providing that service to a customer.

Council Tax bands: Bands defining the upper and lower limit for the value of a domestic property. Each property falls into a band from A to H. The band is used as a basis for setting the level of Council Tax and water charges paid by domestic customers.

Cross-subsidy: The subsidisation of a particular customer group by another group. The former pays less than the actual cost of providing the service and the latter pays more.

Current cost accounting: A method of accounting originally designed to deal with the problem of showing the effect of inflation on business profits. Instead of showing assets at their historic cost (ie their original purchase), less depreciation where appropriate, the assets are shown at their current cost (replacement cost) at the time of producing the accounts.

Customer retained earnings: Scottish Water generates surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. These retained earnings have essentially the same properties as retained earnings (a form of equity) in the private sector, except that they are reinvested for the benefit of customers, rather than with the specific aim of generating increased future profits. In considering this source of funds for Scottish Water we refer to 'customer retained earnings'.

Debt: Borrowings used to finance a company's functions. Scottish Water currently borrows from the Scottish Consolidated Fund at public sector borrowing rates.

Debt premium: The debt premium is that part of an interest rate that represents the corporate risk of the debt instrument above the risk-free rate. Investors therefore require the premium to compensate them for the additional risk of the debt instrument over government securities.

Depreciation: Depreciation is a measure of the consumption, use or wearing out of an asset over the period of its useful life.

Domestic properties: Properties used as single domestic dwellings (normally occupied), receiving water and/or sewerage services for domestic purposes only.

Drinking Water Quality Regulator (DWQR): The DWQR was established by the Water Industry (Scotland) Act 2002. The DWQR provides an independent check that Scottish Water is complying with the drinking water quality regulations. These regulations reflect European Union and other statutory standards.

Econometric modeling: The use of regression and other statistical techniques to model the relationships that underlie economic and financial results.

Economic level of leakage: The level of leakage at which further leakage control activity would cost more than alternative means to bridge the gap between supply and demand.

Economies of scale: Means that the average cost of producing one unit of output falls as the volume of production increases. This could happen because a cost that changes very little with output, such as the cost of running an accounts department, is shared among a greater amount of output.

Economies of scope: Means that it is cheaper to produce two (or more) products together, rather than to produce them separately. For example, the production of timber planks also results in the production of sawdust.

Efficiency: Achieving the same or better outputs for lower expenditure.

Eligible customers: Occupiers of premises that are (or are to be) connected to the public water supply system and/or the public sewerage system, but which are not defined as a dwelling.

Embedded debt: Debt, due in more than one year, in company balance sheets which attracts a fixed rate of interest rather than a floating rate.

Equity: The net worth of a firm. Equity is usually shares, preference shares and retained earings.

Financial model: A computer model that uses historical financial data together with a series of assumptions and scenarios to predict the future incomes and expenditures (and hence the revenue requirement) of Scottish Water.

Gearing: A company's net debt expressed as a percentage of its total capital (ie the ratio of net debt to net debt plus equity expressed as a percentage).

Guaranteed Minimum Standards: The minimum standards of service that Scottish Water must meet, and which customers have a right to expect. Failure to comply with any of the standards entitles the customer to financial compensation.

Historic Cost Accounting: The traditional form of accounting, in which assets are shown in balance sheets at their cost to the organisation (historic cost), less any appropriate depreciation.

Income and Expenditure account: Also known as a Profit and Loss account. The accounting statement where a company records its earnings and expenses in each year and calculates its net and gross profit.

Infrastructure assets: Mainly underground assets, such as water mains and sewers and also lochs, dams and reservoirs. A distinction is drawn between infrastructure and non-infrastructure assets because of the way in which the assets are managed, operated and maintained.

Infrastructure renewals charge: An annual accounting provision for expenditure on the renewal of infrastructure assets charged to the Income and Expenditure account.

Interest: An annual payment on debt aimed at compensating an investor for the risk and opportunity cost of an investment.

Interest cover: The number of times a company's profits, before interest and tax, cover interest due on all its borrowings.

Interim determination: In relation to Scottish Water, a review (carried out by the Water Industry Commission under section 29F of the 2002 Act (as amended by the 2005 Act)) of the maximum amounts determined under section 29B of the 2002 Act (as so amended).

June Return: See Annual Return.

Key Performance Indicators (KPIs): A set of financial ratios used to measure financial sustainability.

London Inter Bank Offered Rate (LIBOR): The rate at which banks lend to each other.

Licence holder: A person to whom a licence has been granted.

Licensee: A person to whom a licence has been granted.

Licensing authority: A body authorised by law to grant licences.

Load: A measure of strength and quantity of waste water, usually expressed in Kg BOD per day.

Logging up and down: An adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on prices only in the next regulatory control period.

MEAV: Modern equivalent asset value. The value of assets if they were replaced efficiently with the latest technology.

Megalitre: One million litres, or 1,000 cubic metres.

Ministerial Guidance: Ministers' proposals, published in February 2005, for a statement to be made under section 29D of the 2002 Act (as amended by the 2005 Act) and for a set of directions to be made under section 56A of the 2002 Act (as so amended).

MI/day: One megalitre per day.

Modified historic cost: A basis for valuing assets by increasing the asset cost by inflation each year to represent a more realistic cost level.

Monopoly: When only one company sells a product that has no close substitutes, it faces no competition in the market. The customer who wants to buy the product has no choice of supplier.

Net present value: The economic value of a project, at today's prices, calculated by netting off its discounted

cash flow from revenues and costs over its full life.

Network: The physical assets downstream of production and bulk storage facilities owned by Scottish Water which are essential for the supply of water to customers up to the boundary stopcock of customer premises.

Network operator: The company responsible for operating and maintaining a utility network.

Non-core business: Anything other than core business, for example consultancy services, plumbing, recreation, farming and waste management.

Non-domestic properties: Properties receiving water and/or sewerage services that are used exclusively for public, business, trade or manufacturing purposes, or domestic dwellings used for commercial purposes.

Non-infrastructure assets: Mainly above-ground surface assets, such as water and sewage treatment works, pumping stations and company laboratories, depots, workshops and equipment.

Overall performance assessment (OPA): Combines results for customer service measures with information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service.

Operating expenditure: Comprises day-to-day running costs such as employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, and vehicle running costs.

Panel data: Performance information collected over a number of years.

PFI: Private Finance Initiative, precursor to Public Private Partnership.

Population equivalent of sewage treatment works:

The capacity of sewage treatment works is measured in terms of the amount of organic material that can be treated. It is assumed that one person is equivalent to a Appendix 1 Glossary of terms and definitions

load of 60g of BOD. This measure includes industrial waste water treated at works.

Public Private Partnership (PPP): The three former water authorities decided to let a total of nine concessions for the building and operation of waste water treatment plants. These concessions were for a period of 25-40 years. The concessions were usually let to joint venture companies which usually consisted of a consultant engineering and design firm, a construction contractor and an operations company.

Quality and Standards (Q & S): The standards set by the Scottish Executive, the Scottish Environment Protection Agency and the Drinking Water Quality Regulator to ensure that Scotland receives safer drinking water and a cleaner environment. The standards are determined largely by the policies of the Scottish Ministers, which are underpinned by standards agreed with the European Union. The Quality and Standards process sets out the environmental and drinking water standards that Scottish Water must meet and estimates the investment that is required to meet them.

Rate of Return: The annual income and capital growth from an investment, expressed as a percentage of the original investment.

Regulatory capital value (RCV): The capital base used in setting charge limits. The value of the regulated business on which Scottish Water can earn a return.

Regulatory information: Financial, customer and engineering data collected by the regulator for monitoring, benchmarking and financial analysis.

Regulatory (or 'WIC') letters: Letters requesting regulatory information from Scottish Water by the Commissioner.

Reporter: The Reporter is an independent auditor who reviews most aspects of Scottish Water's information submissions. This includes auditing both Scottish Water's Annual Return and its business plan submissions, as well as scrutinising the costing, scope and content of the proposed investment programme.

Retail/wholesale activities: Retail is the selling of goods or services directly to consumers. Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers.

Retail price index (RPI): The rate of inflation applying to a basket of retail prices over a period of time.

RPI-X regulation: A form of regulation that involves setting price caps that are measured relative to the RPI. All of the UK economic regulators have used price cap (RPI-X) regulation to limit the prices that companies are allowed to charge their customers.

Retail subsidiary of Scottish Water: The undertaking that will be established by Scottish Water in compliance with section 12 of the Water Services etc. (Scotland) Act 2005, to perform the activities of a licensed retail entity.

Revenue: The total amount of money that Scottish Water collects (from customers) in a year.

Scottish Executive: The devolved Government in Scotland and their civil service support.

Scottish Environment Protection Agency (SEPA): SEPA is responsible for a range of activities, including regulating discharges to rivers, lochs, estuaries and coastal waters and for protecting and improving the water environment, including River Basin Management Planning under the Water Environment and Water Services Act 2003.

Section 29D statement: A statement of policy regarding charges made by Ministers under new section 29D of the 2002 Act (as inserted by the 2005 Act).

Section 56A directions: Directions given to Scottish Water by Ministers by reference to new section 56A of the 2002 Act (as inserted by the 2005 Act).

Special factors: Factors taken into account when setting Scottish Water's operating expenditure targets.

Spend to save: Spend to save expenditure is spending now to save money later, for example redundancy payments now to reduce wage bills in the future.

Standard customers: A set of representative 'typical customers' who are defined by aspects such as their consumption, connection size and rateable value. We can calculate the impact of tariff changes on the bills for each of these 'typical customers'. Customers can then match the service they receive with the standard customer who is most similar to themselves, allowing them to understand the likely impact on their bills of changes in tariffs.

Supply/demand balance: The balance between the amount of a company's available water resource and the demand for water by customers. Any imbalance between supply and demand can be met via resource enhancement or demand management strategies (eg selective metering and leakage control).

Surface water drainage charge: The part of the waste water charge that covers the cost of removing and cleaning impurities and pollution from rainwater from roofs and private lands, as well as from roads and other public areas.

Tariff basket: Includes all of the tariffs that impact on customers who receive a particular service. For example, if measured non-household water customers were considered as a group, all of the tariffs that impact on them would be included.

Ten principles: These principles were agreed between Scottish Water, the Scottish Executive and this Office in 2003. The principles set out a range of measures to improve information flows and clarify both Scottish Water's efficiency targets and the nature and scope of any adjustments that are made for the purposes of comparison.

Trade effluent: Industrial waste water other than that produced through normal domestic systems such as sinks and toilets.

Unsatisfactory intermittent discharges (UIDs): At times of heavy storms, some sewers are designed to overflow into water courses, as are storm water retention tanks at sewage treatment works. Where this results in unacceptable levels of discharge into water courses, these discharges are deemed by SEPA to be unsatisfactory. Scottish Water proposes to address around 280 UID schemes between 2006-10.

Value chain: The different activities that occur one after another, and which must be carried out in order to provide customers with water and waste water services.

Water Customer Consultation Panels: Established by the Water Industry (Scotland) 2002 Act, to represent the views and interests of customers served by the public sector water industry in Scotland. The Panels are independent of Scottish Water and of other agencies, including the Water Industry Commissioner.

The Water Industry Commission: A body established by the Water Services etc. (Scotland) Act 2005 to replace the Commissioner as the party responsible for economic and customer service regulation of the public sector water industry in Scotland.

The Water Industry Commissioner for Scotland (WICS): A role established by the Water Services Act 1999 to carry out economic and customer service regulation for the public sector water industry in Scotland.

Water Industry (Scotland) Act or 2002 Act: The Water Industry (Scotland) Act 2002 (2002 asp 3).

Water Services etc. (Scotland) Act or 2005 Act: The Water Services etc. (Scotland) Act 2005 (2005 asp 3).

Weighted average cost of capital (WACC): The weighted average cost of capital combines the rate of return from debt and from equity relative to the share of each in the market value of the firm.

Appendix 1 Glossary of terms and definitions

Wholesale activities: See retail.

Wholesale services agreement: An agreement between Scottish Water and a licensed retailer, setting out the terms and conditions of the relationship between the parties, as required by section 14 of the Water Services etc. (Scotland) Act 2005.

Appendix 2

Commissioning letter from Ross Finnie MSP, Minister for Environment & Rural Development



SCOTTISH EXECUTIVE

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26 May 2004



STRATEGIC REVIEW OF WATER CHARGES: 2006-10

27 MAY 2004

Introduction

- 1. I am writing to inform you of:
 - 1.1. the broad arrangements that the Executive wishes to be followed in the next Strategic Review of Water Charges (SRC); and
 - 1.2. the Executive's initial views on the public policy considerations that it requires to be taken into account in the SRC.

SRC arrangements: background

- The Executive announced on 23 April that the forthcoming Water Services (Scotland) Bill will
 include provisions to improve the transparency, accountability and robustness of the economic
 regulation to which Scottish Water is subject. As these provisions will be directly relevant to
 the SRC, I summarise them below.
- The main features of the provisions on the economic regulation of Scottish Water to be included in the Bill are:
 - 3.1. The repeal of the provisions at sections 29 to 34 of the Water Industry (Scotland) Act, under which Scottish Water's charges for providing core services to its customers are set, and their replacement by new provisions on setting such charges, including charges for trade effluent services.







- 3.2. A Water Industry Commission for Scotland to take over all of the functions of the Commissioner (whose office will be dissolved). The Commission will comprise a nonexecutive Chairman, a Chief Executive and between 2 and 4 other non-executive members.
- 3.3. A duty on Ministers to specify the period of time to be covered by each SRC.
- 3.4. A duty on Ministers to set the standards and objectives to be achieved by Scottish Water in the provision of core services during the period to be covered by a SRC.
- 3.5. A duty on Ministers to set out the principles to be applied by the Commission in setting charge limits for different customer groups at the conclusion of a SRC and to be applied by Scottish Water and the Commission respectively in making and approving charges schemes consistent with the charge limits.
- 3.6. A duty on the Commission to determine the limits on what Scottish Water can charge different customer groups for the provision to them of core services, including trade effluent services. These limits will be set for each of the years covered by a review period and must be consistent with whatever principles on charging Ministers set. (The Commission will be under a duty to publish and consult on its proposals for the limits in advance of determining what they are to be.)
- 3.7. A duty on the Commission to undertake interim reviews of charge limits within a SRC period, where there has been a material change in any of the factors taken into account by the Commission in a SRC, and for the Commission to consult publicly on the procedure that it will adopt, and the criteria that it will apply, in establishing the circumstances in which it will conduct an interim review.
- 3.8. A duty on the Commission, in determining charge limits, to ensure that the revenue from the limits, when taken with all borrowing authorised by the Executive, is sufficient to allow Scottish Water to perform its core functions and meet stated Ministerial objectives at the lowest reasonable overall cost.
- 3.9. A duty on the Commission to consider proposals for annual charges schemes (based on Ministers' statement on the principles of charging and the Commission's charge limits) from Scottish Water. If the Commission does not approve the scheme as proposed, it is to put in place one of its own devising and to publish its reasons for having taken this course.
- 4. Also, the Executive has agreed with the UK Government that these provisions will be supplemented by powers taken at Westminster under the Scotland Act 1998 that will enable Scottish Water to appeal to the Competition Commission against charge determinations made by the Water Industry Commission.
- 5. The statutory framework created by these provisions will establish a transparent and robust process for setting charges in which the Executive, the Water Industry Commission, Scottish Water and the Competition Commission each have clear and well-defined functions to perform. This will serve the customer interest by identifying the lowest cost at which Scottish Water can deliver the improvements in quality and standards to which we are all committed.







- 6. Subject to the Parliament approving the Water Services Bill, and to it securing Royal Assent, the Bill's provisions on charges and on the creation of the Water Industry Commission will be commenced by June of next year. The powers enabling the Competition Commission to consider appeals from Scottish Water will be commenced in the autumn of that year. The closing stages of the SRC will be conducted under these new statutory arrangements. The intention is that the Water Industry Commission will be in place by August 2005 at the latest, enabling it to make the final decisions on charge limits in light of representations from the Executive, Scottish Water and others, between September and November 2005. Scottish Water will be able to appeal the Commission's decisions to the Competition Commission.
- 7. If for any reason it does not prove possible to put the new arrangements in place, Ministers will take decisions on charge limits in light of advice from the Commissioner at the conclusion of the SRC. Such advice should describe any changes made by the Commissioner to his proposed charge limits as a consequence of representations made by Ministers, Scottish Water and any others in respect of the proposals, the reasons for making those changes and the reasons for resisting any changes sought in the representations. However, even in these circumstances it will be in the customer interest for the clearer and more transparent process envisaged by the Bill to have been followed as far as is possible. Therefore the arrangements for the SRC that I outline below reflect that approach and for the most part will apply whether or not the relevant provisions in the Bill are in force. (Paragraph 9 comments further on this point.)

SRC: process

- 8. Responsibility for taking forward the SRC and for bringing it to a timely conclusion rests with the Commissioner, until such time as the Water Industry Commission is established to replace his office. Subject to consultation, it will be for the Commissioner to determine the methodology to be used in the review and to manage the detailed process by which he gathers and tests information from Scottish Water and produces proposed and then final charge limits. The Executive expects the Commissioner and Scottish Water to take forward this work having regard to the following points:
 - 8.1. The evidence on Scottish Water's investment priorities that is emerging from the Quality and Standards III process: The Executive, Scottish Water, the Commissioner, SEPA, the Drinking Water Quality Regulator, CoSLA and other stakeholders are working, through the Quality and Standards III process (Q&SIII), to identify Scottish Water's investment priorities for the period 2006-14. Q&SIII will be the subject of public consultation later this year and the outcome of the consultation will be a major factor for the Executive in setting the objectives that Scottish Water is to be required to achieve in its core business during the Q&S period as a whole. As work on Q&S progresses, it will provide increasingly robust information about the investment programme that Scottish Water should be delivering between 2006 and 2014. Scottish Water and the Commissioner should use this information to inform their work on the SRC.
 - 8.2. The SRC period to be 2006 to 2010: The Commissioner is to proceed on the basis that the SRC will determine charge limits for the first four years of the eight-year period covered by Q&SIII. This determination is to be based on an assessment of the cost of delivering the full Q&S programme over eight years and, in addition to the charge limits for 2006-10, should provide an indication of likely charge limits for the following four years. The indicative limits are required so as to illustrate the estimated cost of the full Q&S programme. They will not be binding. A further SRC for the period 2010-14 will







- determine charge limits for that period and will do so in light of the Q&S investment programme for that period having been reviewed in 2008-09.
- 8.3. Borrowing and the SRC: The SRC charge limits should reflect decisions on borrowing levels for 2006-08, and assumptions on borrowing levels for 2008-10, that the Executive will notify to Scottish Water and the Commission in January 2005. At that date, the Executive will also state what assumptions should be made about borrowing for the purposes of the indicative charge limits required for 2010-14. The borrowing assumptions that the Executive will notify for the period beyond 31 March 2008 will be provided for illustrative purposes and should not be taken as implying a commitment by the Executive. The Executive will announce firm borrowing levels for 2008-10 in late 2006
- 8.4. Initial views from the Executive on the public policy considerations that it requires to be taken into account in the SRC: these are set out in the next section of this letter.
- 8.5. A first draft business plan from Scottish Water: This should be submitted to the Executive and the Commissioner by 31 October 2004. In light of the evidence emerging from Q&SIII, the first draft should provide an assessment by Scottish Water of the objectives for its core business for the period 2006-10, and how these should be delivered, in light of the Executive's initial views on public policy considerations. It should set out separate proposals for the management and the funding of the retail entity as required at paragraph 21 below. This version of the plan will have two purposes. The material on the core business will inform the early stages of the Commissioner's work on the SRC. (For that reason its format and the information that it contains must be consistent with whatever the Commissioner specifies to Scottish Water as being required for this work. He will set out his requirements to Scottish Water in writing not later than 25 June 2004.) And, along with the outcome of the consultation on Q&SIII, it will inform the Executive's decisions on the objectives that Scottish Water is to deliver during the SRC period.
- 8.6. Detail of the public policy considerations that the Executive requires to be taken into account in the SRC: In light of conclusions arising from, and the outcome of the consultation on, Q&SIII and of Scottish Water's first draft business plan, the Executive will set out its detailed objectives for Scottish Water during the SRC period. It will also set out the public expenditure assumptions that the Commissioner and Scottish Water should take into account in taking forward the SRC and in the case of Scottish Water in developing a second draft business plan. The Executive will provide this information by end-January 2005. In light of this information Scottish Water should prepare by 20 April 2005 a second draft business plan, whose main purpose will be to inform the Commissioner's detailed analysis of how much it should cost Scottish Water to deliver the Executive's objectives.
- 8.7. The principles that the Executive requires the Commissioner to apply in setting charge limits: In light of responses to the consultation on the principles of charging that the Executive will undertake this year, the Executive will set out the principles that the Commissioner must apply in setting charge limits for different customer groups. This information, which the Executive will provide by end-January 2005, will provide the Commissioner with the basis upon which he should share out Scottish Water revenue requirements among different customer groups.







- 8.8. The proposed charge limits for the period 2006-10: The Commissioner must publish proposed charge limits by the end-June 2005, with a view to the Executive, Scottish Water and others commenting on them by end-August. In working between September and November to determine final charge limits, the Commission might have to re-work the Commissioner's proposals if, in light of the implications of the proposals for customer charges, the Executive decides that there should be any adjustment to its objectives for Scottish Water during the review period.
- 8.9. The final charge limits: These should take account of any change in the Executive's objectives for Scottish Water and of any comments on the analysis underpinning them from Scottish Water or others. The Commission must publish them by end-November 2005. They will apply to the scheme of charges that is to come into effect on 1 April 2006. In the event that Scottish Water decides to appeal to the Competition Commission against the limits, the limits will continue in effect until the Competition Commission comes to a decision on the appeal.
- 8.10. The scheme of charges for 2006-07: Scottish Water will propose to the Commission a scheme of charges for 2006-07 and the Commission will either approve it or replace it with one of its own devising in time for 1 April 2006.
- 9. If the provisions on charge setting by the Water Industry Commission proposed for the Water Services (Scotland) Bill, and on appeal powers for the Competition Commission, are not commenced in time for them to apply to the final charge limits, the intention is that the process as described at sub-paragraphs 8.1 to 8.8 above will apply. Thereafter, instead of determining final charge limits, the Commissioner would submit his proposed charge limits to Ministers in the form of advice under the provisions at section 33 of the Water Industry (Scotland) Act 2002. Once Ministers had come to a decision on the advice and this had been published, the provisions for making a scheme of charges under sections 31, 32 and 34 of the 2002 Act would have effect.
- 10. The Commissioner and Scottish Water should be mindful throughout the SRC of the possibility of the Competition Commission considering an appeal by Scottish Water against charge limits set by the Commission. Accordingly, both parties should maintain full and accessible records of their respective actions during the course of the SRC. These should include a record of all exchanges between the two parties and of all analysis undertaken by them in support of the SRC. The Executive expects Scottish Water to provide the Commissioner with whatever information he requires to conduct the SRC. If Scottish Water is unable to comply with any such requirement, it should advise the Commissioner in writing of the reasons for this.

Initial views from the Executive on the public policy considerations that it requires to be taken into account in the SRC

11. I set out below the Executive's initial view on the public policy considerations that Scottish Water and the Commissioner must take into account in taking forward work on the SRC. These relate mainly to the Executive's objectives for Scottish Water and they should be addressed in Scottish Water's first draft business plan. The Executive will provide a fuller description of its objectives for Scottish Water at the conclusion of Q&SIII and in light of Scottish Water's first draft business plan.







The Executive's objectives for Scottish Water

- 12. The Executive's broad objectives for Scottish Water for 2006-14 are that it should:
 - 12.1. Ensure, as a minimum, that the levels of the core services provided to customers through Scottish Water's assets do not deteriorate during the period.
 - 12.2. Plan to comply with the full range of statutory obligations that it expects its regulators to place on it during the period.
- 13. Q&SIII will consider in detail the manner in which these objectives should be secured in the period 2006-14 as a whole. The Commissioner and Scottish Water should take forward work on the SRC on the basis that the Executive will not require Scottish Water to deliver any objectives in the 2006-10 period that have not been considered in Q&S discussions. Meantime, in its first draft business plan Scottish Water should set out a programme of work for the period 2006-10 that it judges to be a practical and achievable means of addressing the two broad objectives described above. In doing so it should identify those areas where it considers that its regulators have discretion in placing or enforcing statutory obligations on Scottish Water and what it considers to be the appropriate standards to be set in such cases. It should identify too the arrangements that it will need to make to enable it to provide water and sewerage services to licensed providers of these services as described at paragraphs 16 to 21 below. On these bases, it should set out the levels of borrowing from the Executive that it considers would be appropriate to support the programme; and the impact on the level of current charges of implementing such a programme at the level of borrowing envisaged by Scottish Water.
- 14. In addition, the first draft business plan should set out any other objectives that Scottish Water judges it appropriate for it to be pursuing during the 2006-10 period. In doing so, it should set out the levels of borrowing from the Executive that it considers would be appropriate to support the achievement of such additional objectives, and the impact on future charge levels of meeting such objectives, at the level of borrowing that it envisages. (For both illustrations the impact on charge level should be expressed in terms of the current tariff structure and should not make any assumptions about changes in the structure that might be required once the Executive has set out its principles on charging.) In the second draft business plan Scottish Water should set out the programme of work necessary for it to deliver the outputs specified by the Executive in January 2005 (paragraph 8.6 refers).

Scottish Water's core functions

- 15. In preparing its first draft business plan, Scottish Water should take account of the changes to its core business that will be a consequence of the Water Services (Scotland) Bill.
- 16. Scottish Water's core functions are defined at subsection 70(2) of the Water Industry (Scotland) Act 2002. As matters stand, these functions include the provision of retail water and sewerage services to non-household customers. In light of provisions to be included in the Water Services (Scotland) Bill, these services will cease to be core functions with effect from 1 April 2006.







- 17. The Bill will prohibit both common carriage on the infrastructure vested in Scottish Water and the provision by anyone other than Scottish Water of retail water and sewerage services to households; and it will enable third parties under licence to provide retail services to non-household premises. It will confer powers on Ministers to direct Scottish Water to establish a separate legal entity for the purposes of acquiring a licence to provide all retail water and sewerage services, including trade effluent services, to non-household premises and subsequently of performing the functions of a licensed provider to non-household premises.
- 18. As foreshadowed in its consultation paper on the draft Bill, the Executive intends to exercise these powers of direction so as to require Scottish Water to establish a retail entity, licensed under the provisions of the Bill, which will come into existence on 1 April 2006. As a consequence of this, Scottish Water will cease to provide water and sewerage services, including trade effluent services, to non-household premises from that date. Instead it will sell such services to the retail entity, which in turn will sell the services to non-household customers. Limits on the amounts that Scottish Water can charge for selling such services to licensed retailers, including the retail entity, will be covered in the SRC and will form part of the charge limits that the Commission will set for Scottish Water.
- 19. In the first instance the retail entity will provide all such services to all non-household customers served by Scottish Water's infrastructure. During that time, the retail entity's licence will regulate the relationships between the entity and Scottish Water and between the entity and its customers. The licence will extend to the amounts that that the entity can charge its customers. These charges will not form part of the charges scheme in respect of core services.
- 20. The intention is that this state of affairs should continue for two years (i.e. until 1 April 2008), so that the Commission can develop plans for licensing third parties, while avoiding disruption in the retail market, which could undermine the Executive's wider policy objectives for Scottish Water. During this interim period, the Commission will put in place preparations to license other providers to compete with the retail entity in providing retail services to non-household customers. When these arrangements become operative on 1 April 2008, the charges levied by Scottish Water to the retail entity and all other providers will continue to be regulated within the SRC and by the charges scheme. However, subject to the Commission judging that the retail market is being contested, the charges levied by providers, including the retail entity, will be unregulated and will be a matter of contract between the provider and its customers. (In the event that the Commission concludes that the market is not contested, it will continue to regulate the charge to customers beyond April 2008.)
- 21. Scottish Water's first draft business plan should take account of these planned changes and should distinguish between those of its functions that will continue to be core and those that will cease to be so after 1 April 2006. The plan should set out Scottish Water's proposals for the objectives that the re-defined core business should be delivering in the period 2006-10. It should also identify those functions that Scottish Water considers should become part of the retail entity and should contain separate proposals for their management and funding after 1 April 2006. It should do so on the basis that the Executive will wish any borrowing by the entity, including working capital, to be kept to a minimum, and to be clearly justified in terms of the effective performance by Scottish Water of its core functions.







Conclusion

- 22. I will write to you again in January 2005 with detailed information on the objectives and standards that the Executive requires SW to achieve during the review period, on the Executive's assumptions about Scottish Water's borrowing limits in the period, and about the principles that the Executive will require the Commission to apply in setting charge limits at the conclusion of the review.
- 23. I am sending copies of this letter to the Chairman of the Competition Commission, the Chairman of SEPA, the Drinking Water Quality Regulator for Scotland and the Convener of the Water Customer Consultation Panels.

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Appendix 3

Summary work plan for May 2004 to May 2006

Event	Date
May 2004	
WIC 5: Customer service performance return (Quarter 4 – 2003-04)	07/05/2004
WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
WIC 4: Domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
Presentation by Scottish Water of cost allocation system to Reporter	14/05/2004
WIC 6: Quality performance assessments (written) (Quarter 4 – 2003-04) –	
Scottish Water provides complaints files	24/05/2004
WIC 45: Issue of draft regulatory accounting tables (2003-04)	27/05/2004
WIC 25: RAB (resource accounting and budgeting) submission for April 2004	28/05/2004
June 2004	
Complete draft financial model	09/06/2004
Award research project on financial ratios and borrowing	09/06/2004
Workshop for Scottish Executive on methodology	10/06/2004
Workshop for Scottish Water on methodology	11/06/2004
Workshop for academics on methodology	17/06/2004
Workshop for stakeholders on methodology: 1st stakeholder information day	18/06/2004
Capital Investment Return: Quarter 4 – 2003-04 submission	18/06/2004
Write out to workshop attendees on issues raised	24/06/2004
WIC 43: Annual Return 2003-04 submission	25/06/2004
Guidance due to Scottish Water on 1st draft Business Plan submission	25/06/2004
Draft financial model provided to Scottish Water	25/06/2004
WIC 25: RAB (resource accounting and budgeting) submission for May 2004	28/06/2004
July 2004	
Scottish Water to submit initial issues regarding guidance on 1st draft Business Plan	05/07/2004
Scottish Water to submit initial issues regarding methodology	05/07/2004
Initiate financial ratios & borrowing project	05/07/2004
Workshop on 1st draft Business Plan guidance	09/07/2004
Half yearly meeting with Water Customer Consultation Panels (WCCPs)	09/07/2004
Workshop for Scottish Water on draft financial model	14/07/2004
Scottish Water final issues regarding guidance for 1st draft Business Plan	16/07/2004
Scottish Executive Quality and Standards III consultation	20/07/2004
Scottish Executive Principles of Charging consultation	20/07/2004
Publication of the work plan for the Strategic Review of Charges 2006-10	21/07/2004
Workshop for Scottish Water on methodology for calculation of prices for the Strategic Review	21/07/2004
Guidance to Reporter on 1st draft Business Plan audit	21/07/2004
WIC 25: RAB (resource accounting and budgeting) submission for June 2004	28/07/2004
Workshop for Scottish Water on methodology for assessing the scope	
for efficiency for the Strategic Review	28/07/2004
WICS final clarifications/responses on 1st draft Business Plan guidance	28/07/2004
WIC 43 Annual Return – 1st round of queries: response due from Scottish Water	30/07/2004
August 2004	
Capital Investment Return: Quarter 1 – 2004-05 submission	01/08/2004
Stakeholder information day	06/08/2004
WIC 5: Customer service performance return (Quarter 1 – 2004-05)	13/08/2004
Publication of framework for the Strategic Review of Charges 2006-10	16/08/2004
WIC 43 Annual Return – 2nd round of queries: response due from Scottish Water	27/08/2004
·	
WIC 25: RAB (resource accounting and budgeting) submission for July 2004	27/08/2004

Event	Date
September 2004	
Scottish Water submits draft regulatory accounting tables (2003-04) – delayed from 18/08/2004	16/09/2004
Publication of methodology for calculation of prices for the Strategic Review of Charges 2006-10	22/09/2004
MSP briefing – wrote to MSPs offering an update	23/09/2004
WIC 25: RAB (resource accounting and budgeting) submission for August 2004	25/09/2004
Scheme of charges – submission due from Scottish Water	27/09/2004
Publication of draft financial model and draft manual	29/09/2004
October 2004	
Stakeholder information day	01/10/2004
Publication of methodology for assessing the scope for operating cost efficiency for the	
Strategic Review of Charges 2006-10 – delayed from 29/09/2004	07/10/2004
WIC 47: Strategic Review of Charges 2006-10 – delivery of Quality and Standards II — issued	11/10/2004
WIC 48: Cost Estimates for the Quality and Standards III programme – issued	13/10/2004
WIC 25: RAB (resource accounting and budgeting) submission for September 2004	28/10/2004
Scottish Water submits 1st draft Business Plan	29/10/2004
Scottish Water submits draft investment programme to Reporter for audit –	
delayed from 01/09/2004	29/10/2004
Baseline investment programme for Quality & Standards III (draft programme)	31/10/2004
November 2004	
Capital Investment Return: Quarter 2 – 2004-05 submission	01/11/2004
WIC 50: Public Private Partnership Schemes – issued	11/11/2004
WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
WIC 4: Domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
WIC 5: Customer service performance return (Quarter 2 – 2004-05)	12/11/2004
Workshop on detail of Business Plan (definitional & clarification issues)	15/11/2004
Close of methodology consultations – delayed from 31/10/2004	18/11/2004
WIC 51: Potential for a Quality and Standards II overhang – issued	19/11/2004
Scottish Water Board presentation on key strategic issues	23/11/2004
WIC 52: Trade Effluent Customer Information	24/11/2004
Publication of high-level summary of Scottish Water's 1st draft Business Plan	25/11/2004
WIC 25: RAB (resource accounting and budgeting) submission for October 2004	26/11/2004
Stakeholder information day	26/11/2004
	20/11/2001
December 2004	
WICS response to 1st draft Business Plan and its implications for customers	03/12/2004
WIC 53: Publication of guidance for 2nd draft Business Plan	08/12/2004
WIC 55: Strategic Review of Charges – Regulatory Accounts – issued	13/12/2004
Scottish Water to submit initial issues regarding WICS guidance for the 2nd draft Business Plan	14/12/2004
WIC 54: Request for information relating to water treatment and wastewater treatment plants	14/12/2004
Workshop on 2nd draft Business Plan guidance	17/12/2004
Guidance to Reporters on 2nd draft Business Plan	17/12/2004
Publication of methodology for assessing the scope for capital investment efficiency for the	
Strategic Review of Charges 2006-10 – delayed from 29/09/2004	17/12/2004
WIC 56: Cost base for benchmarking Scottish Water's investment plan	20/12/2004
WICS draft corporate plan & budget to Scottish Executive	23/12/2004
Scottish Water final issues regarding guidance for 2nd draft Business Plan	23/12/2004
WIC 25: RAB (resource accounting and budgeting) submission for November 2004	28/12/2004
WIC 24: Leakage strategy	31/12/2005

Event	Date
January 2005	
WICS final clarifications/responses on 2nd draft Business Plan guidance	10/01/2005
Publication of report on financial ratio and borrowing – delayed from 23/08/2004	12/01/2005
Publication of summary of methodology for the Strategic Review of Charges 2006-10 –	
delayed from 29/09/2004	19/01/2005
Financial Model workshop	21/01/2005
Stakeholder information day	24/01/2005
Reporter's final report on capital programme contained in Scottish Water's draft Business Plan –	
delayed from 19/11/2004	24/01/2005
Workshop on regulatory accounts and transfer pricing tables	27/01/2005
WIC 25: RAB (resource accounting and budgeting) submission for December 2004	28/01/2005
Half yearly meeting with Water Customer Consultation Panels (WCCPs) –	
delayed from 15/12/2004	28/01/2005
Close of methodology consultations – for methodology published 17/12/2004	28/01/2005
February 2005	
Capital Investment Return: Quarter 3 – 2004-05 submission	01/02/2005
WIC 57: Corporation Tax	03/02/2005
WIC 58: Public Private Partnership Contracts	03/02/2005
Detailed guidance from Ministers – delayed from 31/01/2005	09/02/2005
Stakeholder workshop on implications of Ministerial Guidance	11/02/2005
WIC 5: Customer service performance return (Quarter 3 – 2004-05)	11/02/2005
WICS writes to Scottish Water on cost of capital and plans for treating embedded debt –	
delayed from 07/12/2004	15/02/2005
Full release of Financial Model	18/02/2005
Final version of capital programme to be submitted to Reporter for audit	23/02/2005
Tri-partite workshop on implications of Ministerial Guidance – delayed from 09/02/2005	23/02/2005
WIC 25: RAB (resource accounting and budgeting) submission for January 2005	28/02/2005
Copy of methodology response to Scottish Water & Scottish Executive –	
delayed from 17/11/2004	28/02/2005
March 2005	
WIC 24: Leakage Strategy (Updated)	11/03/2005
Stakeholder information day	17/03/2005
MSP briefing – wrote to MSPs offering an update	24/03/2005
WIC 25: RAB (resource accounting and budgeting) submission for February 2005	29/03/2005
April 2005	
Scottish Water submits 2nd draft Business Plan	20/04/2005
WIC 61: Annual Return 2004-05 guidance issued	22/04/2005
Launch of initial consultation on licensing – delayed from 20 April 2005	28/04/2005
May 2005	
Workshop on the detail of Scottish Water's 2nd draft Business Plan	
(definitional and clarification issues)	05/05/2005
Capital Investment Return: Quarter 4 – 2004-05 submission – delayed from 1 May 2005	09/05/2005
Stakeholder information day	09/05/2005
WICS response to final guidance from Ministers published – delayed from 28/02/2005	10/05/2005
Scottish Water Board presentation on key strategic issues	12/05/2005

Event	Date
WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
WIC 4: Domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
Publication of Scottish Water's 2nd draft Business Plan	16/05/2005
Methodology response published – delayed from 19/11/2004	27/05/2005
WIC 25: RAB (resource accounting and budgeting) submission for March 2005 –	
Submission completed and delayed from 27/04/2005	30/05/2005
June 2005	
WIC 25: RAB (resource accounting and budgeting) submission for April 2005 –	
delayed from 27 May 2005	02/06/2005
Draft Strategic Review of Charges to printers	14/06/2005
WIC 61: Annual Return 2004-05 submission	17/06/2005
WIC 55: Regulatory accounting and transfer pricing tables 2004-05 submission	17/06/2005
WIC 25: RAB (resource accounting and budgeting) submission for May 2005	28/06/2005
Publication of draft Strategic Review of Charges 2006-10	30/06/2005

July 2005

Half yearly meeting with Water Customer Consultation Panels (WCCPs)

Stakeholder information day

WIC 61: Annual Return – 1st round of queries: response due from Scottish Water

WIC 25: RAB (resource accounting and budgeting) submission for June 2005

Close of initial consultation on licensing

August 2005

Capital Investment Return: Quarter 1 – 2005-06 submission

Stakeholder information day

WIC 5: Customer service performance return (Quarter 1 – 2005-06)

WIC 61: Annual Return – 2nd round of queries: response due from Scottish Water

WIC 25: RAB (resource accounting and budgeting) submission for July 2005

Final guidance from Ministers

September 2005

MSP briefing – wrote to MSPs offering an update

Stakeholder information day

Deadline for representations on draft Strategic Review of Charges

WIC 25: RAB (resource accounting and budgeting) submission for August 2005

October 2005

WIC 25: RAB (resource accounting and budgeting) submission for September 2005

Start of consultation on draft licence conditions

Stakeholder information day

November 2005

Capital Investment Return: Quarter 2 – 2005-06 submission

WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2005-06)

WIC 4: Domestic customer revenue information (Quarter 2 – 2005-06)

WIC 5: Customer service performance return (Quarter 2 – 2005-06)

Final Strategic Review of Charges to printers

WIC 25: RAB (resource accounting and budgeting) submission for October 2005

Publication of Final Strategic Review of Charges 2006-10

30/11/2005

23/09/2005

Event Date

December 2005

Half yearly meeting with Water Customer Consultation Panels (WCCPs)

Prices to Commission from Scottish Water

WIC 19: Investment appraisal audits

Stakeholder information day

WIC 25: RAB (resource accounting and budgeting) submission for November 2005

WIC 24: Leakage strategy

January 2006

WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06)

Scottish Water provides list of complaints

WIC 25: RAB (resource accounting and budgeting) submission for December 2005

Close of consultation on draft licence conditions

February 2006

Capital Investment Return: Quarter 3 – 2005-06 submission

WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06)

Scottish Water provides complaints files

Publication of Investment and Asset Management Report (2004-05)

WIC 5: Customer service performance return (Quarter 3 - 2005-06)

WIC 25: RAB (resource accounting and budgeting) submission for January 2006

Stakeholder information day

March 2006

WIC 25: RAB (resource accounting and budgeting) submission for February 2006

WIC XX: Annual Return 2005-06 guidance issued

WIC XX: Regulatory accounting and transfer pricing tables 2005-06 guidance issued

April 2006

Scottish Water retail business licensed

Publication of Customer Service Report (2004-05)

WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06)

Scottish Water provides list of complaints

WIC 25: RAB (resource accounting and budgeting) submission for March 2006

May 2006

Capital Investment Return: Quarter 4 - 2005-06 submission

WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06)

Scottish Water provides complaints files

WIC 5: Customer service performance return (Quarter 4 – 2005-06)

WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2005-06)

WIC 4: Domestic customer revenue information (Quarter 4 – 2005-06)

WIC 25: RAB (resource accounting and budgeting) submission for April 2006

Appendix 4

Guidance on principles of charging

THE PRINCIPLES TO BE APPLIED IN CHARGING FOR PUBLIC WATER AND SEWERAGE SERVICES IN SCOTLAND 2006-2010

STATEMENT BY THE SCOTTISH EXECUTIVE

INTRODUCTION

Purpose

- 1. This statement sets out the principles that the Scottish Executive (the Executive) requires the Water Industry Commission for Scotland (the Commission) to apply:
 - a) In determining the limits on what Scottish Water (SW) can charge for the provision of each of its core services to each of its customer groups in the period 1 April 2006 to 31 March 2010; and
 - b) In approving SW's proposals for schemes of charges covering its core services during the same period.
- 2. Subject to enactment of the Water Services etc. (Scotland) Bill, the Executive will confirm that the statement is the "statement of policy" that the Executive is required to produce under section 29D of the Water Industry (Scotland) Act 2002, as introduced by section 18 of the Bill.

Background

- 3. In May 2004, the Minister for Environment and Rural Development, Ross Finnie MSP, wrote to the Water Industry Commissioner for Scotland (WIC) and SW initiating the 2006-10 strategic review of water charges (SRC).
- 4. The purpose of the SRC is to provide a basis for determining limits on SW's charges by establishing the lowest overall reasonable cost at which SW can deliver in 2006-10 the objectives for its core services set for that period as part of the objectives for 2006-14 that the Executive has set out in the companion to this statement.
- 5. At present responsibility for taking forward the SRC rests with the WIC, who is required to publish for consultation by the end of June 2005 a draft determination of charge limits for 2006-10 that complies with the principles set out in this statement. Thereafter, and subject to enactment of the Water Services etc (Scotland) Bill 2005, the Commission will succeed the WIC and become responsible for concluding the SRC.
- 6. On assuming its responsibilities, the Commission will consider representations in respect of the WIC's draft determination that SW and any other interested parties wish to make. In light of this consideration, and consistent with the principles set out in this statement, it will publish a final determination in December 2005. SW will prepare for the Commission's approval a scheme of charges for the year 2006-07 that is consistent with the terms of the determination.

Public consultation and research

- 7. The Executive's consultation paper *Paying for Water Services*, which was published in July 2004, invited public views on the principles that the Executive proposed should underpin charging policy. The Executive commissioned ERM Consultants to produce an analysis of the 321 responses that it received to the consultation. To supplement the opinions expressed in these responses, the Executive commissioned MRUK Ltd. to research the views that a cross-section of household and other customers had on the proposals in the paper. The principles set out in this statement take account of ERM's analysis and of the findings of the MRUK research.
- 8. In *Paying for Water Services* the Executive announced that it would undertake research into the existence of any imbalances in SW's tariff structure that give rise to what might be seen as cross-subsidies among customer groups. It commissioned the economic consultants Stone and Webster to work with SW and the WIC in establishing and analysing the evidence of any imbalances and to recommend what if any action should be taken to address them. The Executive has taken account of Stone and Webster's conclusions in setting its principles of charging.
- 9. The Executive is publishing ERM's analysis of responses to the consultation paper, the findings of MRUK and the report by Stone and Webster to accompany the statement.

Advice from the WIC and SW

- 10. The WIC wrote to the Minister on 2 December 2004 setting out his view of the prospects for the SRC. He advised that he considered there to be no reason why SW could not achieve objectives that required it to deliver efficiently one of the largest capital programmes ever contemplated in the UK and to do so with average charges remaining constant in real terms. He cautioned that there would be a limit on the size of the programme that could be delivered efficiently. He proposed that, in preparing his draft determination, he should be required to identify the largest possible programme consistent with efficient delivery.
- 11. SW, in its response to the WIC's letter, took a slightly more cautious view on the level of charge increases that it would be likely to need over the review period. However, it did not disagree with the broad thrust of the WIC's assessment.
- 12. The Executive has had regard to this advice in setting the principles of charging in this statement and in setting the objectives for SW in the accompanying statement.

The principles of charging

Purpose

- 13. The objectives that the Executive has set for SW are intended:
 - a) To achieve the maximum affordable improvements in public health and environment protection standards.
 - b) And to support housing and its top priority of economic growth in communities across Scotland through investment in new water and sewerage capacity.
- 14. The Executive requires the Commission to determine charge limits that will enable Scottish Water to achieve these outcomes and also improvements in operating performance on the basis of charges that are affordable and stable across the review period and that are sustainable in the long term.

Full cost recovery: the Executive's role in providing financial support to SW

- 15. Paying for Water Services proposed that water charges should be set to recover the full costs incurred by SW in providing public water and sewerage services. Under this approach, public expenditure in support of water and sewerage services takes the form of lending by the Executive to SW. The cost of servicing and repaying this borrowing by SW is borne by customers as part of the charges that they pay.
- 16. Respondents to the consultation, and particularly those participating in the MRUK research, recognised the rationale behind this principle. However, a significant minority expressed, often in strong terms, the view that the Executive's support for SW should include an element of grant funding, for example, to ease the burden on customers of having to meet the substantial costs of investment in improved standards of environment protection. The Executive has considered these views, but has concluded that such an approach would undermine the strengthened economic regulation of SW in the customer interest that is a key objective of the Water Services etc. (Scotland) Bill.
- 17. The regulatory model is dependent on SW being subject to normal commercial disciplines and on it being set firm limits on charges that require it to achieve challenging efficiency savings. This is the approach that has been in place since 1999, which has been applied to SW since its creation in 2002, and which the Bill strengthens. Its benefits are becoming increasingly apparent with the prospect of SW's average charges remaining flat in real terms over the period 2006-10 at a time when they are increasing significantly in real terms in England and Wales.
- 18. In the Executive's view, SW's reliance on regulated charge income to meet its full costs including the costs of borrowing imposes an important discipline on the business. That discipline would be undermined were part of the cost of delivering the Executive's objectives to be met routinely by grant, rather than borrowing, from the Executive. The effect of weakened discipline could lead to failure to meet efficiency targets, which would leave SW in need of additional funding, either through increased charges or additional grant. Over time this would tend to produce charges higher than otherwise would have been the case.

- 19. In view of these considerations, the Executive has decided that public expenditure support to SW in the provision of its core services throughout the period 2006-10 will take the form of lending alone and that no grant will be paid in respect of these services during the period. Information about the level of that lending is given in the next section.
- 20. The WIC has stated his belief that customers should not be asked to pay twice for the same benefit. The Executive endorses this principle on the basis that customers should be asked to meet additional costs beyond those allowed for in a charges determination only where these have arisen as the result of external factors beyond the control of SW. The Water Services etc. (Scotland) Bill provides a mechanism whereby a determination can be reviewed in such circumstances.
- 21. This approach protects the position of customers. To provide similar protection for public expenditure, the Executive confirms that it will not increase its lending to SW to meet the cost of objectives already funded by a determination. This will ensure that the determination will provide SW with firm financial limits for the regulatory period in question. The Executive will work with the WIC and the quality regulators to monitor SW's performance against agreed targets to ensure that any threat to the financial limits or to the achievement of the Executive's objectives within these limits is identified and addressed satisfactorily at an early stage.

Stable charges, financial sustainability and the level of Executive lending to SW

- 22. The Executive recognises the importance that customers attach to stability and certainty in charging. The publication of charge limits at the conclusion of the SRC will give customers certainty about the level of the charges that they will face over the life of the regulatory period. In light of the WIC's advice that it would be feasible to contemplate average charge levels being kept constant in real terms during the review period, the Executive has decided that achieving this outcome should be an objective for the SRC.
- 23. Achieving constant average charges in real terms could be consistent with some charges rising above inflation and others falling in real terms, for example where tariff rebalancing is justified. Where this is necessary, the Executive requires the Commission to minimise the impact on those customers affected by any increase. It should set charge limits that deliver the most regular and smooth charges profile possible in the circumstances. In particular, the Executive requires the Commission to avoid reductions in charges one year if such a reduction could not be sustained, or if they would need to be followed in subsequent years by an increase in real terms. The Commission should ensure, where a permanent increase in a given tariff is necessary, that the increase is phased over the review period unless there is a more effective means of minimising the impact of the increase.
- 24. The Executive does not wish stable charges in the period 2006-10 to be secured at the expense of SW's longer-term financial sustainability. That is to say, it does not wish charges to be kept low in the medium term by building up debt whose servicing costs would add to SW's cost base and would result in charges in the longer term being higher than would otherwise have been the case. To safeguard the position of customers in the longer term, the Executive considers, as a minimum, that SW's financial strength should be maintained over the period 2006-10, and that if possible it should be improved slowly over that time. Most

respondents to *Paying for Water Services* who commented on this point, and the majority of those consulted by MRUK, appeared to agree with this approach.

- 25. The level of borrowing that would be consistent with long-term financial sustainability will be dependent on the maximum size of the capital programme that the Commission judges SW to be capable of delivering efficiently. Therefore, the Executive wishes the Commission to determine the amount of lending from the Executive in each year of the review period that would be necessary to support a capital programme of the scale set by the Commission and that would be consistent with a gradual and steady improvement in the long-term financial sustainability of SW. This requirement is subject to the amount of lending by the Executive in any one year in support of these objectives being no greater than £182 million, which is the maximum sum that the Executive has set aside for lending to SW in the each of the years 2006-10, pending the charge determination and the Commission's decision on the sustainable level of borrowing required to underpin the determination and the investment programme.
- 26. In addition to the lending that the Executive will make available for the achievement of its objectives in 2006-10, the Executive will make available any lending provided for the period 2002-06 that has not be drawn down by SW and which is required to meet the costs of any investment from that period which is completed in 2006-10.

Harmonised charges

- 27. A fundamental tenet of Executive policy on water charging is that customers in the same group should pay at the same rate for the provision of the same service, regardless of their location, or of the actual cost of serving one such customer as against another.
- 28. The Water Services etc. (Scotland) Bill enshrines this principle in statute by requiring the Executive to set principles of charging that secure that outcome. The principle was endorsed strongly by respondents to *Paying for Water Services* and by those approached by MRUK in their research for the Executive. The Executive confirms that the Commission must set charge limits for all of SW's core services during the period 2006-10 on the basis of all tariffs being set at a nationally averaged rate for Scotland as a whole. This means that charges in respect of given services to particular customer groups should be set to recover the cost to SW nationally of providing that service to that group as a whole. Where, for whatever reason, this requirement gives rise to significant charge increases for individual customers, the Commission is required to have regard to the Executive's requirement that such increases be phased gradually over the review period to minimise the impact of any increase in any one year.

Affordable charges for low income households

29. In Paying for Water Services the Executive proposed introducing a new water charges discount for low-income households whose objective would be to make water charges as affordable as possible for those on low incomes. The proposal envisaged that all households in receipt of Council Tax Benefit (CTB) would be eligible for the discount, and that the cost of the discount would be met from the savings generated by the abolition of the existing discounts on water charges available to single adult households and to the owners of second homes

- 30. Most respondents to the consultation agreed with the objective of the proposed discount, though about half of those questioned by MRUK had reservations about it being justified. There was clear support that the 50% discount on water charges available to the owners of second homes should be abolished to pay for the new discount.
- 31. However, there was considerable opposition to ending the 25% discount that single adult households receive. Expressions of opposition were not confined to the consultation and research exercises. They included many individuals who wrote to their MSPs or to the Executive directly. A particular concern of opponents of this part of the proposal was the impact that it would have on single pensioners on low incomes. It was pointed out frequently that many in this group, though entitled to CTB, were reluctant to claim it. In such cases the effect of losing the current discount and of not claiming CTB and thus of not being eligible for the new discount would mean that they would see their bills increase by 33% when the new discount was introduced.
- 32. The Executive has reflected carefully on these concerns. It has concluded that the risk to some of the most vulnerable in the community from ending the single adult discount is significant and that there is no feasible means of addressing it. Consequently, it has decided to retain this discount and to modify its proposed new discount to reflect this. The intention now is to introduce a matching 25% discount, which will be available to households that comprise two or more adults and which receive CTB. The cost of this discount will be met by proceeding as proposed with abolition of the discount on water charges for second homes.
- 33. The Executive will make regulations to provide for the new discount to take effect in full, and for the second homes discount to be ended, from 1 April 2006. The discount will be a permanent means of assisting those receiving CTB. Therefore, the present water charges transitional relief scheme, which is also based on CTB eligibility, but is temporary, will come to an end on 31 March 2006, rather than continuing until 31 March 2007 as planned previously.
- 34. Provision of the new discount and the continuation of the single adult discount are dependent on the local authorities retaining their current responsibility for the billing and collection of household water and sewerage charges. The Executive will consult the local authorities, the Commission and SW about revising the statutory instrument that governs billing and collection of water and sewerage charges to ensure that it secures the Executive's policy objectives in these respects during the regulatory period. Meantime, the Executive requires the Commission to have regard to these plans in determining charge limits.

Cost reflectivity of charges

35. In responding to the recommendations by the WIC in the 2002-06 SRC, the Executive endorsed the principle of cost recovery on a nationally harmonised basis. This means that charges in respect of given services to particular customer groups should be set to recover the cost to SW nationally of providing that service to that group as a whole. The Executive remains committed to that principle in general, while recognising that application of the principle in practice sometimes needs to be tempered by other public policy considerations – such as providing more affordable charges to low-income groups, or continuing with the link between household water charges and the Council Tax band of the household served.

- 36. An area of particular concern in recent years has been the extent if any to which the charges paid by non-household customers have exceeded their fair share of SW's costs.
- 37. The consultancy work undertaken for the Executive by Stone and Webster was intended to establish and analyse the evidence of any imbalances between the two sectors and to recommend what if any action should be taken to address them. Stone and Webster's report concludes that SW over-recovers costs from non-household customers. The most robust estimate that the report provides is that this over-recovery results in households paying £44m a year less for water supply services than it costs to provide them with these services.
- 38. The report recognises that there are particular difficulties in attributing the costs of sewerage services across different customer groups at present. It expects these to diminish over time as the quality of SW's data improves. It recommends therefore that action to address a number of imbalances between sewerage customers should be left until 2010-14.
- 39. In the period 2006-10, the report recommends a cautious approach that would achieve a measure of general rebalancing between households and non-household charges. It suggests, on the basis of its most robust estimate, that it would be prudent to correct the under-recovery from household customers of £44 million.
- 40. Responses to the consultation exercise and the research work conducted by MRUK suggested that customers accepted the principle that water and sewerage charges should be broadly cost reflective, but that household customers were concerned that the application of that principle could lead to significant, unwelcome increases in the charge that they would have to pay. The Executive acknowledges these concerns. It recognises too, however, that it cannot be in the interests of growing the Scottish economy and of improving Scottish prosperity for Scottish businesses to bear an additional and unwarranted cost indefinitely.
- 41. The Executive has discussed the matter with the WIC, who has advised that it should be possible to rectify the imbalances identified by Stone and Webster as most suitable for addressing in the period 2006-10 without average household charges having to increase in real terms. In light of this advice, the Executive requires the Commission to determine charge limits for 2006-10 in such a way that these imbalances are corrected without causing average household charges to increase in real terms. In doing so, the Commission should have regard to the requirement that any change in tariffs is phased over the review period unless there is a more effective means of securing the change while maintaining stability in household charge levels
- 42. The counterpart to this exercise will be a reduction in the amount paid by non-household customers. The Executive requires the Commission to allocate the benefits of this reduction equally across all non-household customers.
- 43. Rectifying the imbalance identified by Stone and Webster is the Executive's priority in this area for the period 2006-10. The Executive requires the Commission and SW to conduct further work to establish with greater certainty the nature of other such imbalances, particularly in the case of sewerage services. In light of that work the Commission should advise the Executive of any further rebalancing that would be required to achieve greater cost reflectivity in charging in the period 2010-14.

44. In the meantime, the Executive requires the Commission to set charges in such a way that any costs of retaining the link between household water charges and Council Tax bands, and the Executive's proposals for a new water charges discount, are both funded out of the generality of charges.

Paying for increased local capacity

- 45. SW's infrastructure can be divided into four parts: connections from the boundary of individual premises to the public system (Part 1); the water pipes and sewers that connect developments to the trunk mains and sewers (Part 2); the local infrastructure, such as the trunk mains and sewers, service reservoirs and pumping stations (Part 3); and strategic assets, such as raw water intakes, water impounding reservoirs, aqueducts and treatment works (Part 4).
- 46. Paying for Water Services invited views on whether developers should be expected to meet the costs of providing increased capacity in respect of the Part 3 assets. This was on the basis that the charge limits set by the Commission would include an element to meet the costs to SW of providing whatever enhancements to its strategic (Part 4) capacity are required by new developments. The majority of responses on this point were broadly supportive of the proposal. Accordingly, the Executive's objectives include the requirement for SW to provide all new Part 4 capacity during the period 2006-14. It requires the Commission to ensure that its determination of charges includes the income necessary for SW to achieve this objective.
- 47. Under Part 2 of the Water Environment and Water Services (Scotland) Act 2003, Ministers will bring forward regulations in respect of how SW and developers contribute towards the cost of providing Parts 2 and 3 infrastructure. These regulations will come into effect on 1 April 2006. The intention is that they should provide for developers to meet all Part 2 costs. Therefore, the determination does not need to include provisions for SW in that respect.
- 48. The regulations will also provide for developers of sites to meet the net cost of any Part 3 infrastructure required by their developments. They will do so by establishing a mechanism that will limit the contribution that SW is required to make to the cost of the infrastructure to a sum that will reflect the additional charge income that it will receive as a consequence of the new infrastructure vesting in it.
- 49. The effect of the regulations in respect of Part 3 costs means that from April 2006 there will be a requirement, where an enhancement to a Part 3 asset is required, for developers to fund the excess costs of the enhancement above the contribution that SW will make in respect of the income that it will receive from the development. Consistent with that policy objective, the Executive requires the Commission to ensure that the level of borrowing that it sets for SW is sufficient to enable SW to fund the costs that it will incur in these cases through borrowing, rather than charge income, with reference to the cost of funds to SW and the period over which the contribution is to be amortised.

Future charging arrangements for non-household customers

50. Paying for Water Services recognised concerns among non-household customers that charging for certain water and sewerage services either lacked transparency, or bore little

relation to the cost of the services provided. It proposed long-term changes to the basis on which non-household customers pay for two types of service.

- 51. First, the paper suggested an end to the link between water charges and rateable values in those cases where non-household premises receive an un-metered water supply. It proposed instead that un-metered premises whose consumption of water was relatively modest should be brigaded into two or three bands to reflect in broad terms the levels of consumption associated with their premises.
- 52. Secondly, the paper proposed a similar approach in respect of surface drainage. Thus, it suggested an end to the link between the surface drainage charge and rateable values, and the creation of a system that would place premises and their surrounding surface areas into one of a number of bands intended to reflect the area of roof, car parking etc. that discharged to the public sewers.
- 53. The paper recognised that introducing these changes would take several years of preparation and proposed that both should be implemented with effect from 1 April 2010.
- 54. Responses to the proposal on surface drainage were generally positive. Consequently, the Executive confirms in principle its commitment to the introduction by 2010 of a more cost reflective means of charging for surface drainage.
- 55. Responses in respect of un-metered premises were much less positive. Many non-household customers argued that metering, despite the costs associated with it, was the only effective means of giving adequate transparency to the charging regime and of providing a worthwhile incentive to conserve water resources. The Environment and Rural Development Committee of the Parliament echoed this second point in its stage 1 report on the Water Services etc. (Scotland) Bill. The Committee recommended that the introduction of metering generally across the non-household sector should become a long-term objective for the Executive. The Executive accepts the strength of these arguments and agrees that a commitment to achieving full metering of non-household premises is appropriate.
- 56. In these circumstances, the Commission is required to determine charge limits for 2006-10 in respect of un-metered premises and of surface drainage on the basis of the existing links to rateable values, using the values held by SW and based on the rateable values in place in March 2000.
- 57. Meantime, the Executive will work with the Commission and SW to develop detailed proposals for introducing general non-household metering and banded surface charges. It will consult on these proposals with a view to both changes being implemented as far as is practical by 2010.

Paying for roads drainage

58. At present all sewerage customers contribute to the cost of roads drainage. Non-household sewerage charges include a separate element to cover these costs; household charges include an unspecified element for the same purpose. In *Paying for Water Services* the Executive recognised that non-household customers in particular consider it unreasonable to pay these charges. It noted however that the alternative would be for the cost to be met by the local authorities, which would be a new burden on Council Tax, business rates or central

government support. It suggested that such a change would be unsatisfactory. That remains the Executive's view. Therefore, the Executive requires the Commission to determine sewerage charges for all customers on the basis that they include an appropriate element to recover through these charges the cost to SW of draining roads.

Paying for economic regulation

- 59. The purpose of economic regulation is to promote the interests of SW's customers by ensuring that public water and sewerage services are delivered at the lowest reasonable cost. The Executive considers that it is reasonable for customers to meet the costs of that regulation. It intends to continue the practice whereby the costs of this regulation are paid for by an annual levy on SW that is set by the Executive funded out of charge income. For the purposes of making its determination, the Commission should assume that during the period 2006-10 it will receive an annual levy broadly equivalent to the present base budget of £1.5 million a year. The Commission should allow for the base budget to be augmented by £150,000 in each year of the period to cover the additional costs arising from the creation of the Commission, by enough to meet the costs that are likely to arise in connection with the 2010-14 SRC, and by enough to cover the reasonable costs of employing independent reporters throughout the period 2006-10.
- 60. The costs that the Commission will meet in the period 2006-10 in connection with establishing the regime to license undertakings providing retail services to the non-household sector will be met from a grant that the Executive will pay to the Commission. Therefore, the determination should not make any provision for these costs.

Scottish Executive 9 February 2005

Appendix 5The legislative framework

This appendix sets out a number of key statutory provisions that impact on the economic regulation of Scottish Water. The complete Acts are available from HMSO – see http://www.hmso.gov.uk.

The outgoing regime

The Water Industry (Scotland) Act 2002

Section 1 of the Water Industry (Scotland) Act 2002 states:

1 Water Industry Commissioner for Scotland

- (1) There is to continue to be a Water Industry Commissioner for Scotland (referred to in this Act as the "Commissioner").
- (2) The Commissioner has the general function of promoting the interests of customers of Scottish Water in relation to the provision of services by it in the exercise of its core functions.
- (3) The Scottish Ministers may, after consulting the Commissioner, give the Commissioner directions of a general or specific character as to the exercise of the Commissioner's functions; and the Commissioner must comply with any such direction.
- (4) Part 1 of schedule 1 makes further provision about the Commissioner.

Section 3 of the Water Industry (Scotland) Act 2002, states:

3 Functions of the Commissioner

- (1) The Commissioner must investigate any complaint made to the Commissioner or a Customer Panel by a current, potential or former customer of Scottish Water as respects any of its core functions.
- (2) A Customer Panel must refer to the Commissioner any such complaint which is made to it.
- (3) The Commissioner need not investigate a complaint under subsection (1) if-

- (a) the complainer has not pursued the complaint with Scottish Water, or
- (b) it appears to the Commissioner that the complaint is vexatious or frivolous.
- (4) The Commissioner may, on behalf of the complainer in a complaint investigated under subsection (1), make representations to Scottish Water about any matter-
 - (a) to which the complaint relates, or
 - (b) which appears to the Commissioner to be relevant to the subject matter of the complaint.
- (5) Where the Commissioner investigates a complaint referred by a Customer Panel under subsection (2), or decides not to investigate such a complaint, the Commissioner must send to the Panel a report of the investigation or, as the case may be, a statement of the reasons for not investigating the complaint.
- (6) The Commissioner is to advise the Scottish Ministers on any matter which appears to the Commissioner or to them to relate to-
 - (a) the standard of service provided by Scottish Water to its customers, or
 - (b) the manner in which it conducts its relations with its customers or potential or former customers, in the exercise of its core functions.
- (7) The Commissioner has power to do anything which is calculated to facilitate, or is incidental or conducive to, the exercise of the Commissioner's functions.

Section 33 of the Water Industry (Scotland) Act 2002 replaced the now repeated provisions of Section 13 of the 1999 Act, substituting references to the three authorities with references to Scottish Water:

33 Commissioner's advice on charges

(1) The Commissioner must, when required by the Scottish Ministers, advise them on the matters to be taken into, or left out of, account by Scottish Water in fixing charges in charges schemes.

- (2) The advice is to apply in relation to charges schemes made during such period as the Scottish Ministers may specify (in this section referred to as "the period of the advice").
- (3) In preparing his advice the Commissioner shall have regard to-
 - (a) the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions,
 - (b) the likely cost to Scottish Water, for the period of the advice, of exercising the functions specified in subsection (4),
 - (c) the likely resources, other than income from charges for goods and services, available to Scottish Water for the period of the advice,
 - (d) any guidance issued to Scottish Water by Scottish Ministers, and
 - (e) any directions given under section 44 or 56.
- (4) The functions referred to in subsection (3)(b) are the core functions of Scottish Water so far as consisting of:
 - (a) complying with any duty to which it is subject by virtue of any enactment,
 - (b) complying with any such duty to which it will, or is likely to, become subject during the period of the advice,
 - (c) providing services to its customers at the same standard, and protection of the environment at the same level, as those at the time when the advice is given, or at such other standard or level as the Scottish Ministers may specify, and
 - (d) extending, in accordance with requirements made by the Scottish Ministers, the provision of public sewers and supplies of water to premises or areas not in receipt of such provision.
- (5) The Scottish Ministers must, within 3 months of receiving from the Commissioner advice under subsection (1):
 - (a) accept the advice, with or without modifications, or
 - (b) reject the advice and substitute their own advice for it.
- (6) Where the Scottish Ministers accept the

- Commissioner's advice with modifications or reject it, they must give reasons for doing so.
- (7) The Commissioner must publish advice as accepted, modified or substituted under subsection (5), together with any reasons given under subsection (6).

The Incoming Regime

The Water Services etc. (Scotland) Act 2005

The 2005 Act introduces a new regulatory scheme including the modification and repeal of certain provisions of the 2002 Act. Key provisions (which are expected to come into force in July 2005), include the following:

Part 1 of the Act states:

WATER INDUSTRY COMMISSION AND CUSTOMER PANELS

1 Water Industry Commission for Scotland

- (1) For section 1 (Water Industry Commissioner for Scotland) of the 2002 Act there is substituted-
- "1 Water Industry Commission for Scotland
 - (1) There is established a body to be known as the Water Industry Commission for Scotland (referred to in this Act as "the Commission").
 - (2) The Commission has the general function of promoting the interests of persons (taken as a whole) whose premises-
 - (a) are connected to the public water supply system or the public sewerage system (within the meaning of Part 2 of the Water Services etc. (Scotland) Act 2005 (asp 3)) or both, or
 - (b) might reasonably become connected to either or both of those systems, relating to the provision to them of water and sewerage services.
 - (3) The Scottish Ministers may, after consulting the Commission, give the Commission directions of a general or specific character as to the financial management or administration of the Commission; and the Commission must comply with any such directions.
 - (4) Schedule A1 makes further provision about the Commission.".

2 Dissolution of office of Commissioner

The office of Water Industry Commissioner for Scotland is dissolved on such date as the Scottish Ministers may by order appoint.

Section 21 of the Act substitutes the following for section 29 of Water Industry (Scotland) Act 2002:

21 Scottish Water's charges for water and sewerage services

- (1) For section 29 (charges for goods and services) of the 2002 Act there is substituted:
- "29 Charges for goods and services
 - (1) Scottish Water may-
 - (a) demand and recover charges for any services provided by it in the exercise of its core functions, and
 - (b) fix, demand and recover charges for any goods supplied or services provided in exercise of its other functions.
 - (2) Scottish Water is to exercise the power conferred by subsection (1)(a) in accordance with-
 - (a) a charges scheme, or
 - (b) a departure from a charges scheme for which consent has been given under section 29E.
 - (3) The power conferred by subsection (1)(b) is exercisable by or in accordance with an agreement with the person to be charged.
 - (4) Subsections (1) to (3) are subject to sections 9A and 47 of the 1980 Act (which provide for no charge for water in certain circumstances).

29A Charges schemes

- (1) Scottish Water must make a scheme (referred to in this Act as a "charges scheme") which fixes the charges to be paid for services provided by Scottish Water in the exercise of its core functions.
- (2) A charges scheme must be made by reference to a determination made under section 29B.
- (3) In particular, the scheme must not fix in any case a charge exceeding any maximum charge

- applying to the case by virtue of the determination.
- (4) A charges scheme may make provision with respect to the times and methods of payment of the charges fixed by the scheme.
- (5) The Scottish Ministers and the Commission must provide Scottish Water with such information as it reasonably requires for the purposes of making a charges scheme.
- (6) Scottish Water must send a charges scheme to the Commission for approval by such date as the Scottish Ministers may direct.
- (7) The Commission may approve a charges scheme with or without modifications.
- (8) If the Commission approves a charges scheme with modifications, it must give its reasons for doing so.
- (9) When a charges scheme is approved by the Commission, Scottish Water must-
 - (a) make arrangements for allowing any person to-
 - (i) inspect the scheme at any reasonable time,
 - (ii) obtain a copy of the scheme or part of it on payment of such reasonable fee (if any) as Scottish Water may determine, and
 - (b) publicise those arrangements and publish a summary of the scheme.
- (10) Following approval of a charges scheme by the Commission, the scheme comes into effect on such date as is specified in the scheme.

29B Determination of maximum charges

- (1) The Commission must-
 - (a) determine in writing maximum amounts of charges by reference to which a charges scheme is to be made, and
 - (b) send the determination to Scottish Water by such time as the Scottish Ministers may specify.
- (2) Maximum amounts determined under subsection (1)(a) apply in relation to such period as the Scottish Ministers may specify.
- (3) A determination made under subsection (1)(a) may make different provision for different cases or categories of case.

- (4) Before making a determination under subsection
- (1)(a), the Commission-
 - (a) must send a draft determination to-
 - (i) the Scottish Ministers,
 - (ii) Scottish Water, and
 - (iii) the Convener of the Water Customer Consultation Panels (representing the Panels as a whole),
 - (b) must-
 - (i) publish the draft determination, and
 - (ii) invite (by way of advertisement or otherwise) representations as regards the draft determination by such time as the Commission may specify, and
 - (c) must have regard to any representations made to the Commission by virtue of paragraph (a) or (b).
- (5) The Scottish Ministers and Scottish Water must provide the Commission with such information as it reasonably requires for the purposes of making a determination under subsection (1)(a).

29C Exercise of functions regarding charges

- (1) Scottish Water must exercise its functions under sections 29A and 29F for the purposes of ensuring that subsections (4) and (5) are complied with.
- (2) The Commission must-
 - (a) exercise its functions under sections 29A, 29B and 29F for the purposes of ensuring that subsections (4) and (5) are complied with.
 - (b) exercise its functions under section 29E for the purposes of ensuring that subsection (5) is complied with, and
 - (c) in exercising its functions under those sections, have regard to-
 - (i) any guidance issued to Scottish Water by the Scottish Ministers, and
 - (ii) any directions given to Scottish Water under section 44 or 56, so far as relevant in relation to charges schemes.
- (3) The Scottish Ministers must-
 - (a) provide the Commission with such information as it may require for the purpose of

- subsection (2)(c); and
- (b) in particular, send to the Commission copies of any guidance and directions referred to in that subsection when issued or given.
- (4) This subsection is complied with if (so far as is consistent with compliance with subsection (5)) a charges scheme gives effect to any statement issued under section 29D.
- (5) This subsection is complied with if (so far as is consistent with compliance with section 41(1)) Scottish Water's receipts from the aggregate of-
 - (a) its income from charges for services provided in the exercise of its core functions, and
 - (b) the amount of-
 - (i) any grants paid to it under subsection (1) of section 42,
 - (ii) money it may borrow under subsection (3) of that section, and
 - (iii) any other resources reasonably available to it, for the purposes of the exercise of those functions, is not less than sufficient to meet the expenditure required for the effective exercise of those functions.

29D Statements regarding charges

- (1) The Scottish Ministers must-
 - (a) in respect of a period specified under section 29B(2), and
 - (b) by reference to such economic or other factors as they consider relevant, issue to Scottish Water and the Commission a statement of policy regarding charges under a charges scheme.
- (2) A statement under subsection (1) is to include provision with respect to harmonisation of charges (that is to say, provision with a view to ensuring that a charges scheme does not fix different charges for similar services provided to persons of a similar category).
- (3) A statement under subsection (1) may (so far as is consistent with the provision described in subsection (2) include provision with respect to-
 - (a) the funding of particular services by charges for services as a whole,

- (b) the proportion of the amount of income requiring to be raised by charges fixed by a charges scheme to be contributed by each category of person to whom Scottish Water provides services,
- (c) the fixing of levels of charges by reference to-
- (i) different categories of person to whom Scottish Water provides services, or
- (ii) liability for council tax under Part II (Council tax: Scotland) of the Local Government Finance Act 1992 (c.14), and
- (d) such other matters as the Scottish Ministers think fit.
- (4) In preparing a statement under subsection (1), the Scottish Ministers must have regard to Scottish Water's duty under section 51(1).
- (5) Before issuing a statement under subsection (1), the Scottish Ministers must consult-
 - (a) the Commission,
 - (b) the Convener of the Water CustomerConsultation Panels (representing the Panels as a whole), and
 - (c) Scottish Water.

29E Departure from certain charges

- (1) Scottish Water may, in any particular case, apply to the Commission for its consent to depart from a charges scheme in respect of charges to be paid for services provided to a water services or sewerage services provider.
- (2) The Commission may consent to a departure from a charges scheme only if satisfied that-
 - (a) a customer of the provider has done, or has agreed to, something which reduces or increases the costs incurred by Scottish Water in providing the services to the provider, and
 - (b) the departure is otherwise justified in the circumstances of the case.
- (3) Where the Commission consents to a departure, it may do so subject to such reasonable conditions as it considers are appropriate in the case.
- (4) Where the Commission withholds its consent to a departure, it must give its reasons for doing so.

- (5) The Commission is to make provision in writing which specifies-
 - (a) the procedure to be followed for the purposes of determining applications made under subsection (1), and
 - (b) any matters to be taken into account and the criteria to be applied in-
 - (i) determining whether a departure from a charges scheme is justified, and
 - (ii) the fixing, by Scottish Water, of lower or (as the case may be) higher charges to be paid for the services in question where it is determined that a departure is justified.
- (6) The Commission may from time to time revise the provision.
- (7) In preparing or revising the provision, the Commission must consult-
 - (a) the Scottish Ministers and Scottish Water, and
 - (b) such other persons as it thinks fit, as to the procedure to be followed in considering applications made under subsection (1).
- (8) The Commission must send a copy of the provision to-
 - (a) the Scottish Ministers,
 - (b) Scottish Water, and
 - (c) every water services and sewerage services provider.
- (9) Scottish Water must publish details of every departure from a charges scheme.

29F Review of determinations and charges

- (1) This subsection applies where, since the making of a determination under section 29B(1)(a), there has been or is likely to be material change to-
 - (a) Scottish Water's income from charges for services provided in the exercise of its core functions,
 - (b) the amount of-
 - (i) any grants paid to it under subsection (1) of section 42.
 - (ii) money it may borrow under subsection (3) of that section, or
 - (iii) any other resources reasonably available to it, for the purposes of the exercise of those functions, or

- (c) the expenditure required for the effective exercise of those functions.
- (2) Where subsection (1) applies, Scottish Water-
 - (a) may of its own accord,
 - (b) must, if the Commission requests it to do so, send to the Commission proposals for revising the maximum amounts of charges determined under section 29B(1)(a).
- (3) The Commission-
 - (a) must, after receipt of the proposals, review those amounts, and
 - (b) may revise those amounts to such extent as it thinks fit.
- (4) In reviewing those amounts, the Commission must take into account all matters affecting the resources available to Scottish Water for the purposes of the exercise of its core functions.
- (5) Before revising those amounts, the Commission must-
 - (a) intimate to the Scottish Ministers that revision of those amounts is under consideration,
 - (b) invite (by way of advertisement or otherwise) representations as regards revision of those amounts by such time as the Commission may specify, and
 - (c) have regard to any representations made to the Commission by virtue of paragraph (a) or (b).
- (6) The Commission must give its reasons for deciding whether or not to revise those amounts.
- (7) Where the Commission revises those amounts, it must send to Scottish Water written notice which specifies the revised amounts.
- (8) Scottish Water-
 - (a) may, after receipt of the notice, revise any charges fixed by the charges scheme by reference to the revised amounts specified in the notice, and
 - (b) if it does so, must send written notice of the revised charges to the Commission for approval.
- (9) The Commission may approve any revised charges with or without modifications.
- (10) If the Commission approves any revised

- charges with modifications, it must give its reasons for doing so.
- (11) When revised charges are approved by the Commission, Scottish Water must publish a summary of the revised charges and the date from which they have effect.
- (12) The date from which the revised charges have effect is to be determined by the Commission.

29G Effective exercise of core functions

For the purposes of sections 29C(5) and 29F(1), Scottish Water is to be taken to be exercising its core functions effectively if (in discharging its statutory duties and contractual obligations relating to the exercise of those functions) it makes such use of its resources that, year on year, it-

- (a) achieves the objectives contained in any directions given by reference to section 56A, and
- (b) does so at the lowest reasonable overall cost.".
- (2) In section 30 (maximum charges for services provided with help of Scottish Water) of that Act-
 - (a) in subsection (1), for the words "The Scottish Ministers may by order" there is substituted "A charges scheme must also";
 - (b) in subsection (3), for the words "An order under this section" there is substituted "In relation to maximum charges fixed by virtue of subsection (1), the charges scheme"; and
- (c) in subsection (4)-
 - (i) for the words "an order under this section" there is substituted ", by virtue of subsection (1), a charges scheme"; and
 - (ii) for the word "order" in the second place where it appears there is substituted "scheme".
- (3) Sections 31 to 34 of that Act (which make provision for and in connection with the making of charges schemes by Scottish Water) are repealed.

Section 22 of the Act inserts a new Section 56A into the 2002 Act.

22 Scottish Water's functions: powers of the Scottish Ministers

After section 56 (directions) of the 2002 Act there is inserted:

"56A Directions may set objectives

- In particular, directions under section 56 may in respect of a period specified under section 29B(2) set objectives as to-
 - (a) the standard of the services to be provided in the exercise of Scottish Water's core functions, and
 - (b) the time by which-
 - (i) a particular standard of any of those services is to be attained,
 - (ii) any particular work required for or in connection with the provision of those services is (in part or whole) to be commenced or completed.
- (2) Different objectives may be set for different cases or categories of case.
- (3) In formulating objectives of a type referred to in subsection (1) for inclusion in directions under section 56, the Scottish Ministers must have regard to Scottish Water's duty under section 51(1).
- (4) Before giving directions under section 56 which set objectives of a type referred to in subsection (1), the Scottish Ministers must consult the Convener of the Water Customer Consultation Panels (representing the Panels as a whole) on the objectives."

Appendix 6

Open letter to Lewis Macdonald MSP, May 2005

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

Date: 10 May 2005 OurRef: AS/090505/LM

Mr Lewis Macdonald MSP
Deputy Minister for the Environment & Rural Development
The Scottish Parliament
Edinburgh
EH99 1SP

Dear

Strategic Review of Charges 2006-10

Thank you for your letter of 9th February with which you enclosed the Scottish Executive policy statement that underpins the strategic review of water charges for the period 2006-2010. In summary, your objectives are to improve service to Scottish Water customers, improve water and waste water quality and remove development constraints. Your objective is that we should achieve this within a regime of stable prices for consumers.

Scottish Water has submitted its second draft business plan and we are due to publish this on 16 May. This open letter outlines our approach and our preliminary analysis of the Scottish Water draft business plan.

Taking forward the review

I remain confident that ministerial objectives can be achieved at significantly lower costs than those currently contained in Scottish Water's business plan. I would expect that the draft determination will allow much lower costs in all areas of the business.

As you are aware, Scottish Water's draft business plan indicates an 88% real increase in water charges to domestic customers to fund a £3.0 billion capital programme. This plan would deliver only your essential objectives.

In light of comments and advice from SEPA, the DWQR and the Reporter, I will prepare for public consultation by 30 June a draft charges determination that is consistent with your guidance. I cannot, of course, pre-empt either my analysis or the conclusions that I will reach in my draft determination. However, I can reassure you that I remain confident that a significant increase in investment is consistent with the prospect of stable prices to customers. Perhaps the best reassurance that I can offer you is that regulators have often very substantially reduced the cost of capital investment programmes without impacting the outputs that are delivered. My team and I are working to define the proper scope and efficient cost of the investment programme required to deliver your objectives.

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Alan D A Sutherland Commissioner

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Incentive based on economic regulation

In my letter to you of 2 December, I described how an incentive based approach to economic regulation serves the interests of customers. Under this approach, the UK utility regulators encourage efficiency by setting limits on charges or prices that are based on targets for performance that are challenging, but which at the same time the regulated business is considered to be capable of out-performing. The business has the incentive to meet its targets as efficiently as it can manage because it is permitted to retain the difference between the revenue from the limit on charges and the actual cost of meeting its targets. The benefit to the customer is that charge limits in the following regulatory period are set to reflect any extra efficiency gains secured by the business in the preceding period. Over time, this approach delivers higher standards at lower cost than does regulation based on setting higher, more aspirational targets.

Glas Cymru, the Welsh not for dividend water company, has responded to Ofwat's incentive based regime by using some of the proceeds of the out-performance that the regime has encouraged to provide rebates on its charges to customers within a regulatory control period. In Wales, customers have now enjoyed two such rebates. In addition, they have been shielded to an extent against the risk of external shocks to the business through the creation of a reserve that has been built up from the remainder of the proceeds of out-performance. We believe, from a customer perspective, that there is much to commend this approach.

Scottish Water, in its response to my letter of 2 December 2004 and again in its second draft business plan, has suggested that there should be an appropriate incentive progressively to achieve improved efficiency. I believe that we can develop a model of incentive based regulation that will serve the interests of Scottish Water's customers.

Your statement on the principles of charging puts in place a key requirement for such an approach to work. The statement confirms that customers will not be required to pay for the same benefit twice, and that the Executive will not increase its lending to Scottish Water to meet the cost of objectives whose achievement has already been funded through agreed levels of Executive lending and the charge limits set in a determination. As the statement observes, this provides Scottish Water with firm financial limits within which it must operate during the regulatory control period.

For this review I propose to build on the approach of Glas Cymru and take full account of the specific circumstances of Scottish Water. My approach will be in line with the new Water Industry Commission's duty to set prices that are consistent with Scottish Water delivering the required level of service at lowest reasonable overall cost. The charge caps that I will include in the draft determination will reflect the minimum level of performance that customers should expect Scottish Water to deliver. The draft determination will also indicate the potential for Scottish Water to deliver the required level of performance at an even lower cost. In line with the statutory requirement to set prices consistent with lowest reasonable cost, I believe it would be appropriate to adjust price caps downwards in subsequent years to reflect the extent to which this scope for greater efficiency is actually achieved. The first annex to this letter sets out the mechanisms that would be used. I will set out in the draft determination a clear

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process by which subsequent years' charge caps during the 2006-10 regulatory control period could be adjusted downwards. I believe that this approach is consistent with your statement.

Clearly it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the required level of performance at this lower cost. This will mean the Executive, Scottish Water, and the regulators establishing satisfactory measures of its delivery of specified outputs. The success of Scottish Water's management should be judged by the extent to which it delivers these outputs so as to enable subsequent years charge caps to be adjusted downwards. The detail of the incentives for Scottish Water's managers would be a matter for the Executive and Scottish Water to settle in the particular context of a publicly owned business. I would simply comment that any approach would need to be founded on the principle of bonuses only being paid once Scottish Water's performance had exceeded the minimum acceptable level of performance set in the charge determination.

In the longer term, I believe it could also be desirable to develop a further mechanism which could allow some of the surpluses resulting from out-performance to be retained by Scottish Water. In a similar public sector context, the Post Office established the practice of building up a discrete and separate reserve by using part of its surpluses to buy index-linked gilts. (A summary of this practice is attached as a second annex to this letter.) In this regard, it will also be important to decide how Ministers' objective that customers do not pay twice for the same output would be implemented in practice.

Developing this approach to the situation of Scottish Water, which I understand would be permissible under the terms of the Water Industry (Scotland) Act 2002, would have a number of advantages for the business and its customers. It would create a buffer against external shocks, such as the cost of responding to prolonged adverse weather conditions, which would protect the customers from the need to pay sudden and unexpected increases in charges. I recognise that this buffer, whilst vital to stable prices in the long run, would take some time to implement in an appropriate and effective manner. If you are content, I propose working with your officials on plans to start building up such a buffer for the 2010-14 regulatory control period.

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Conclusion

Our work in producing the Strategic Review of Charges 2006-10 continues to progress well. I remain confident that a significant increase in investment is consistent with the prospect of stable prices to customers. Value for money in the medium term will also be enhanced by the introduction of the measures associated with incentive based regulation that I have outlined

I am sending copies of this letter to the Chairman of Scottish Water, the Chairman of SEPA and the Drinking Water Quality Regulator for Scotland.

Yours sincerely,

Alan D A Sutherland

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Annex 1

The customer benefit mechanism

Objective

To ensure prices are set at a level consistent with services being delivered at lowest reasonable cost.

Aim of Water Industry Commission's analysis

Assess whether the minimum acceptable level of performance (ie the level of customer service, the level of environmental/public health compliance and level of cost that underpin the price caps set out in the determination) has been achieved.

Annual adjustment downwards of prices to reflect financial out-performance

Annual review of performance on the capital programme indicating any variance from the agreed delivery profile (including any implications for public expenditure).

Mode of operation

The annual costs and performance report would set out the financial performance of Scottish Water for the financial year. This would reveal whether Scottish Water had achieved the minimum acceptable level of performance and identify the scope to reduce price caps in the subsequent year. For example the costs and performance report 2006-07 (the first year of the next review period) will be published in October 2007. This will provide sufficient time for the charges scheme for 2008-09 to reflect lower price caps than indicated in the determination if Scottish Water has been successful in achieving the required level of service and environment/public health compliance at lower cost than agreed in the original regulatory contract.

The annual levels of service report will set out our overall performance assessment. It will be a condition of the regulatory contract that the OPA score improves year on year. Key performance indicators for management should reflect this.

The annual investment and asset management report will set out our assessment of the delivery of the planned capital programme.

It may also be appropriate to consult SEPA and DWQR to ensure that they are content with the level of compliance achieved by Scottish Water relative to their expectations at the start of the review period.

If Scottish Water were to reduce its operating costs by £10 million more than was included in price limits, this £10 million (less an amount agreed between

the Scottish Executive and the remuneration committee of Scottish Water to finance employee bonuses) would be returned to customers in the form of a lower price cap in the subsequent year. It may also be possible to allocate a proportion to Scottish Water for use as "spend to save".

If Scottish Water delivers its planned capital programme at £10 million less than was included in price limits, the Regulatory Capital Value would be adjusted. A proportion of the net savings (after an employee bonus allowance) would be available for further investment, a further proportion could be made available to Scottish Water for spend to save purposes and the remainder (after adjusting for operating costs etc.) would be returned to customers.

Implications

It will be important that there is a direct and transparent link (published in advance) between the bonuses available to senior management and the improvement beyond the minimum acceptable level of performance achieved by Scottish Water.

The costs and performance report will become an even more significant document because it may revise price caps downwards during the regulatory control period. We would therefore make the costs and performance report available to Scottish Water significantly in advance of publication.

Annex 2

The Post Office: a case study

The Post Office (including the telephone and mail services) became a public corporation as a result of the 1969 Post Office Act. As a public corporation, it was not allowed to pay dividends to Government. Instead, the Act required a proportion of any retained profit to be used to purchase gilt securities issued by Government. These gilts remained on the balance sheet of the Post Office but, importantly, could only be used under the direction of Ministers. Until relatively recently, the Post Office was highly profitable. The current value of gilts held by the Post Office is well over £1 billion.

The 1999 White Paper on the reform of the Post Office continued this arrangement. A target of 40% of retained earnings should be invested in gilts each year. There is also a minimum target value of gilts to be purchased each year to ensure that public expenditure is not affected by fluctuations in the trading of the Post Office. The White Paper also set out the circumstances where Ministers would use the financial reserve that has been accumulated. Transfers have been made to maintain rural post offices and to finance reform of the Post Office. These costs have, as a consequence, not had to be paid directly by customers.

It is clear that the creation of this financial buffer over a large number of years has assisted the Post Office in the current business climate. It would seem sensible to adopt a similar approach in our funding of the public sector water industry in Scotland.

Appendix 7

Open letter to Ross Finnie MSP, December 2004

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

Date: 2 December 2004 OurRef: AS/060404/AS

Mr Ross Finnie MSP Minister for the Environment & Rural Development The Scottish Parliament Edinburgh EH99 1SP

Dear

Strategic Review of Charges 2006-10

In May 2004 you wrote to both the Chairman of Scottish Water and to me in order to commission work on the Strategic Review of Charges 2006-10. At that time you said that you would write again in January 2005 with a statement of the Executive's decisions on: what Scottish Water is to achieve during the review period 2006-10; the principles that I should apply in setting charge limits for the period; and the borrowing that is likely to be available to Scottish Water during the review period.

I thought that it would be helpful for all parties if I outline now, in advance of your statement, what I consider to be the general prospects for the outcome of the review. I shall also cover a number of issues that are likely to be relevant both to the review and to the decisions that your January letter will cover.

Prospects for the outcome of the review

Preparatory work for the review is progressing well. I have analysed Scottish Water's first draft business plan, which was submitted to you and to me in October. In light of my analysis I am increasingly confident that customers can anticipate a substantial programme of investment by Scottish Water, resulting in better quality and service during 2006-10, with average charge levels rising by no more than the rate of inflation in that period. The outcome of stable charges over the period would be consistent with Scottish Water requiring relatively modest access to borrowing from the Executive, and with long-term financial sustainability for the business.

This forecast reflects my assessment that savings in the capital programme, based on the work identified through the Quality and Standards III process, can be achieved. Having analysed the business plan, it is my assessment that savings will be possible because there is cost overestimation and duplication, as well as opportunities for synergies that will bring economies. It will only be possible for me to confirm this forecast once I have received confirmation of Scottish Water's objectives from you and once I have analysed Scottish Water's proposals for achieving these objectives (which it will set out in its second draft business plan).

Clearly, the size of the capital programme that is required in order to deliver the objectives will be a critical factor in determining whether or not the benign outcome for charges outlined above is achievable.

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The size of the programme also has wider implications for the Executive and for Scottish Water. If Scottish Water's objectives are too ambitious, there is a significant risk that it will not be able to deliver them in full, or that it would deliver part of them inefficiently. In the first scenario, Scottish Water would not need to borrow the full funding that Ministers make available to it to support the programme; this would have consequences for effective allocation and control of public expenditure. In the second scenario, there is a chance either that some outputs would not be delivered or that further borrowing would be required so that all of the required outputs are delivered in full; again, this would have consequences for public expenditure control.

In order to identify the largest programme that it is possible for Scottish Water to deliver, I have analysed the size of programmes that the companies in England and Wales have delivered in recent years. I set out my findings in Appendix 1. This analysis leads me to conclude that at most Scottish Water is likely to be able to deliver an efficiently costed programme in the range £1.9 billion to £2.1 billion (in 2005-06 prices). This investment programme would contain both the new outputs from Quality and Standards III and any undelivered outputs from Quality and Standards II.

Two alternative approaches could be taken to determine objectives for Scottish Water. You could require Scottish Water to deliver a specific set of objectives, which it would be my duty to fund through charges at the lowest overall reasonable cost. This approach would not guarantee the stable charge levels and financial sustainability that I consider are possible. Nor would it avoid the risk of underdelivery or inefficient delivery that I have described.

Alternatively, you could determine objectives for Scottish Water and require me to identify how much of it can be delivered within a framework of stable charges, financial sustainability and efficient delivery.

I believe that the second approach, where the focus is on what can be delivered efficiently, would be in the interests of customers, and of improved public health and environmental protection.

I would be grateful if your statement could set out your preferred approach in this matter.

Profile of prices and changes within a regulatory control period

Over a regulatory control period, the key principle should be that prices are as high as they need to be to enable Scottish Water to achieve its objectives as set by Ministers, but no higher than necessary.

Within this overall principle, there is scope for flexibility in the profile of prices that is adopted during the period. It is possible for relatively large reductions followed by increases in response to short-term troughs and peaks in Scottish Water's revenue requirements (which in themselves are dictated by Scottish Water's costs). The majority of those who have responded to our methodology consultation documents¹ place a premium on price stability and predictability. Their preference is for a determination of charges that stands for the full four-year regulatory period, as opposed to one that has to be revised through interim determinations.

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 $^{^{\}rm I}$ We will shortly publish the responses to our consultation on our web-site www.watercommissioner.co.uk

I recognise that any increases in charges above the rate of inflation are undesirable and ultimately unsustainable. It is my understanding therefore that I should seek to avoid any reductions in prices that would require increases above the rate of inflation in future years. A significant reduction in charges would increase the amount of new borrowing that is required in the early part of the regulatory control period; however, it is likely to mean that borrowing would then need to decrease later in the period, and this may pose difficulties in the management of public expenditure for the Executive.

It would be helpful if your statement could provide guidance about the course you wish me to take in this matter.

Incentive-based regulation

All of the UK economic regulators use an incentive-based approach to determining prices. That is to say, they encourage efficiency and high standards of service by setting targets that they consider the regulated business can outperform. In this model, shareholders benefit from higher returns during the regulatory period and this benefit is transferred to customers through lower prices in the following period.

Regulators have in the past relied on shareholders to exert pressure on management to outperform efficiency targets. More recently, however, the creation of the not-for-dividend companies Glas Cymru and Network Rail has lead regulators to examine alternative corporate governance and incentive structures. The Office of Water Services (Ofwat) set several conditions when it approved the creation of Glas Cymru. These conditions included the creation of transparent incentives which align the interests of management and customers. The Department of Transport and HM Treasury established a similar framework for Network Rail.

The 2006-10 determination of charges should be seen as an agreement between customers and Scottish Water about the level of service that will be provided during the period.

Alignment of incentives is an important principle. Had Ofwat not believed that Glas Cymru would seek to outperform efficiency targets, in the same way as a regulated company that is subject to shareholder pressure, it would needed to have modified the approach to determining Glas Cymru's price settlement. I attach at Appendix 2 a description of Glas Cymru's executive incentive structure.

At present there is no equivalent incentive system in place for Scottish Water's management. As a result it is not clear which benefits or penalties would accrue to Scottish Water in the event that it outperforms or underperforms efficiency or investment targets. Moreover, managerial incentives are not linked in any transparent way to the organisation's performance against economic, public health or environmental targets.

I believe that incentive-based regulation would benefit customers by ensuring that the business has an incentive to improve its efficiency further and more quickly than if I simply set targets, the achievement of which becomes the only objective. Customers benefit from lower prices under incentive-based regulation than would otherwise have been the case.

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For incentive-based regulation to work, it is essential that managerial incentives are available for outperformance of targets, not for progress towards them. Moving to such an approach would have implications for Scottish Water's corporate governance. I recognise that you would want to discuss the matter with Scottish Water's board before deciding whether or not to make such a change, and it is not necessary for the matter to be settled one way or the other in your statement. However, it would be helpful to know by the end of March 2005 whether or not you are minded to proceed with such a move. If you decide not to introduce an incentive-based approach, I shall set targets that are harder than those I would otherwise have set, and Scottish Water would be expected to achieve the targets rather than to exceed them.

Regardless of the approach taken, it is important that in future customers are not asked to pay twice for the agreed level of service. As such, if Scottish Water were to underperform the targets set in the Strategic Review of Charges 2006-10, customers should be reimbursed for any additional costs that Scottish Water incurs. I should state now for the record that I would expect any reimbursement to have no impact on customers. It would therefore have to take the form of grant-in-aid from the Scottish Executive.

Borrowing

A private sector company will seek to manage the maturities of its debt in a way that minimises any refinancing risk. As Scottish Water is a public corporation that borrows from the Executive, it does not currently face any refinancing risk. In light of this, there is no need for Scottish Water to seek to predict movements in the general level of interest rates or changes in the shape of the yield curve. Indeed, if it were to approach borrowing in this way, any short-term benefits that might accrue would be likely to be more than offset by increased interest rate risk in the long term. This could have an adverse impact on price stability and financial sustainability, which would not be in customers' interests.

In these circumstances, the Executive could require Scottish Water to seek to match its borrowing to the expected lives of the assets that it acquires during the Quality and Standards III investment programme. This would reduce the risk to stable charges and future public expenditure from movements in interest rates. Subject to any comment on this point that you include in your statement, I am minded to set price limits on the assumption that Scottish Water will match its borrowing to asset lives.

When banks are considering whether or not to extend additional credit to an organisation, they will seek reassurance that they have a proper understanding of the financial circumstances of the borrower. I would recommend that the Executive puts similar arrangements in place whereby Scottish Water must reassure the Executive that it is on target to meet, or outperform, its regulatory settlement on each occasion that it borrows from public funds.

If you require me to achieve charge stability and financial sustainability for the long term as part of the determination, I shall draw on a series of financial ratios to monitor compliance with that objective, on the assumption that Scottish Water at least matches the targets that I set in the determination.

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Monitoring and the scope of the capital programme

As noted above, I am firmly of the view that Scottish Water should be set challenging but achievable objectives. In this regard, it is important that we agree a capital programme of a size that can be delivered efficiently. Significant capital expenditure to deliver environmental, public health and customer service improvements will be required for the foreseeable future. It is in customers' interests that these improvements are affordable and deliverable.

Quality and Standards II was itself a substantial investment programme and it seems increasingly likely that a large proportion of that programme will not be delivered during the current regulatory control period. This will limit the opportunity for Quality and Standards III outputs to be delivered in the next regulatory control period.

The Reporter has identified a number of areas where the cost and scope of projects within Scottish Water's capital programme have been overestimated. This should counterbalance some of the effects of the underspend; as a result, during the next review period it will be possible to deliver a greater number of Quality and Standards III outputs for a given sum than might have been suggested by the business plan costings.

We need to be cautious about any further significant increase in the size of Scottish Water's capital programme; doing so could actually reduce the outputs delivered by introducing a pressure to spend that could adversely impact on efficiency. It could be asserted that the capital programme proposed in Scottish Water's first draft business plan is without precedent. In my view, it would be likely to lead to an even larger overhang at the end of the next review period than we have for this period. A large overhang is not in the interests of customers, the environment or public health. I have outlined my analysis of the extent of any deliverability constraint on the size of the capital programme in Appendix 1.

It is essential that delivery of the Quality and Standards III capital programme is monitored carefully throughout the next regulatory control period. For this to happen, stakeholders will need to have a detailed, defined list of projects and their outputs. The list should include detailed descriptions of how Scottish Water will deliver the objectives that you set for it. Once the list has been established, I will work closely with the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA) to provide regular updates about progress of capital projects and to confirm that quality outputs have been delivered.

I would be happy to provide regular updates to the Scottish Executive on Scottish Water's progress in delivering the agreed investment programme for the next regulatory control period.

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Principles of charging

I look forward to receiving your statement on the principles that I should apply in setting draft charge limits for each service and class of customer. Appendix 3 sets out the areas that I hope your statement will cover

I have noted the proposal in the 'Paying for Water Services 2006-10' consultation that all significant changes in customers' charges should be phased in over an entire regulatory period. It is possible, however, that one way to help smooth the peaks and troughs in the profile of charges would be to rebalance tariffs more quickly. I would be grateful to know whether you would wish me to consider this option if it can be done without increasing other customers' bills in real terms.

Conclusion

I look forward to your statement, which will underpin the Strategic Review of Charges 2006-10. In general our work is progressing well and is in line with our work plan (as set out in Volume 1 of our methodology consultation).

The main exception is the uncertainty that surrounds the extent of the Quality and Standards II investment programme that will not have been delivered by the end of the current regulatory period. It is because of this uncertainty that I have delayed my consultation on the approach to assessing the scope for capital efficiency at the next review.

Notwithstanding this delay, it is clear that unless there is a requirement for an unreasonably substantial increase in the capital programme, the prospect for customers' charges, and for effective investment in public health and the environment, is better than it has been for some time.

I am sending copies of this letter to the Chairman of Scottish Water, the Chairman of SEPA and the Drinking Water Quality Regulator for Scotland.

Yours sincerely,

Alan D A Sutherland Water Industry Commissioner for Scotland

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Appendix 1: Level of investment

Issues for the statement

I believe that the statement should address the following issues:

- the extent of investment that Scottish Ministers consider is desirable, given the need to ensure that the investment can be delivered and that it represents value for money;
- the required improvement in the level of service provided to customers (this
 includes issues such as water pressure, sewer flooding, odour, etc) by Scottish
 Water's current assets [capital maintenance investment];
- the outputs required from investment to improve water quality [quality investment]:
- the outputs required from investment to improve the environment [quality investment];
- how current perceived or actual constraints on development (both for housing and business) should be addressed [growth investment] in terms of regional priorities; and
- whether, and, if so with what priority, requests for first time connection to the public water and sewerage system [growth investment] should be met.

Background

Following the agreement on the Ten Principles in 2003, I appointed a Reporter to review the information that is supplied to me by Scottish Water. The Reporter is Mr David Arnell of Black and Veatch Consulting Ltd.

At my request, the Reporter has reviewed the costing of the capital programme as outlined in 'Investing in Water Services 2006-14'.

He concluded that there are flaws in Scottish Water's cost estimates for the first draft business plan, which give rise to a material overestimation. The impact appears to be greatest on the quality elements of the programme.

I have asked Scottish Water to provide an action plan to address the Reporter's detailed findings as a matter of urgency.

It appears increasingly likely that the Quality and Standards II investment programme will not have been delivered in full by April 2006. Our analysis of the first Quality and Standards II projects to have been completed also suggests that the capital efficiency targets set in the Strategic Review of Charges 2002-06 may not be met.

If Quality and Standards II has not been delivered in full (either because budgets have not been spent in full or because investment has been delivered less efficiently than the targets set in the Strategic Review of Charges 2002-06), the remaining outputs from this investment programme will have to be delivered during the period of the Strategic Review of Charges 2006-10. This will inevitably mean that less of the proposed Quality and Standards III investment programme can be delivered before 2010.

Size of the investment programme

The Quality and Standards II investment programme was approximately £1.91 billion over four years, which is a very large investment programme. It appears likely that around 15% of this programme will not have been delivered before April 2006.

Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger; Anglian Water and Yorkshire Water are similar in size to Scottish Water.

It is instructive to examine the investment programmes that these companies have delivered over consecutive four-year periods. There are 17 such four-year periods for which investment has been delivered (or defined) since privatisation of the industry south of the border in 1989. To ensure that comparisons are made on a like-for-like basis, we have adjusted the size of the programme to take account of inflation. This analysis demonstrates that there is a clear maximum to the size of capital programme that can be delivered efficiently.

The following table compares the size of programmes delivered or defined by the companies with that proposed in Scottish Water's first draft business plan.

	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
Thames	£2,200m	£1,992m	£540
Severn Trent	£2,773m	£2,078m	£782
United Utilities	£2,509m	£2,174m	£849
Anglian	£1,856m	£1,315m	£841
Yorkshire	£1,727m	£1,236m	£838
Quality and Standards II	£1,930m ²		£833
Scottish Water's	Planned total investment: £2,432m		Planned
first draft			investment per
business plan			connected
			property: £1,050

The table shows that Quality and Standards II was a very large investment programme. It was larger than the largest programme ever delivered by Anglian Water and Yorkshire Water (the two companies a similar size to Scottish Water). It is also very large in terms of investment per connected property.

The table also illustrates that only two of these companies have ever delivered larger programmes than that now proposed by Scottish Water. It is also useful to note that none of these companies has ever delivered a larger four-year investment programme on a per connected property basis than £1.9 billion3 that was targeted for Scottish Water during Quality and Standards II.

The following table shows the frequency with which these companies have delivered four-year investment programmes of more than $\mathfrak{L}1.6$ billion.

¹ The original £1.81 billion investment programme included in the Strategic Review of Charges 2002-06 increases to

^{£1.93} billion as a result of higher than expected capital outputs inflation.

See footnote 1.

³ See footnote 1.

Size of four-year investment programme	Size of programme per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	2.4
Over £2.5 billion	£625m	4	4.7
Over £2.4 billion	£600m	6	7.1
Over £2.3 billion	£575m	11	12.9
Over £2.2 billion	£550m	15	17.6
Over £2.1 billion	£525m	23	27.1
Over £2.0 billion	£500m	29	34.1
Over £1.9 billion	£475m	41	48.2
Over £1.8 billion	£450m	44	51.8
Over £1.7 billion	£425m	48	56.5
Over £1.6 billion	£400m	54	63.5
Under £1.6 billion	£400m	31	100.0

The privatised companies have delivered programmes of more than £2.4 billion on only six occasions, or 7.1% of all of the possible four-year periods. Indeed, the investment required by Quality and Standards II has been delivered in only around a third of all of the possible four-year periods.

If the investment programme is set at a level that is too ambitious, there is a significant risk that it will not be delivered in full or that it will be delivered inefficiently. In the first case, Scottish Water would not require the full public expenditure that Ministers make available. In the latter case, there is a chance either that some outputs are not delivered or that further public expenditure is required in order to ensure that the outputs required are delivered in full.

Ofwat has reported that the companies south of the border have achieved significant improvements in their capital expenditure efficiency over the last ten years. It is interesting to note that these improvements have been achieved at a time when the companies have been required to deliver slightly smaller, though still significant, investment programmes.

Approach to price setting

Two factors related to investment influence the level of prices and government borrowing. These are the post-efficiency level of investment and the mix between capital maintenance investment and investment in quality and growth in the network.

Our work in setting an efficiency target will depend in large measure on the mix of investment that Quality and Standards III requires. There are also doubts surrounding the initial costing of Quality and Standards III. It is therefore quite difficult at this time to estimate accurately the outputs that are likely to be deliverable during the next regulatory control period.

Given these uncertainties, I would ask Ministers to:

 provide their views on the investment programme that they consider is essential for the four years of the next regulatory control period – this should include any element of Quality and Standards II that may not have been delivered;

- highlight any investment that must be delivered before 2010, so that I can take this into account in establishing the most economically efficient way to phase the investment;
- provide an extensive list, clearly prioritised, of other desirable outputs so that I can add these outputs to the essential list if the deliverability constraint has not been reached prioritisation of the additional desirable outputs will need to be at detailed level as it is likely that the deliverability constraint will be triggered.

Establishing a baseline capital investment programme

Establishing a baseline investment programme for Quality and Standards II has proved to be a very protracted and time-consuming process. Detailed definition of the baseline investment programme would bring major benefits for stakeholders and customers, and its lack to date has caused difficulties. Definitions need to include both the physical projects to be delivered and the outputs the projects are required to achieve.

Based on our experience of the WIC 18 process⁴, we have outlined for stakeholders our requirement for a fully defined capital investment programme for the Strategic Review of Charges 2006-10. At the outset of the Quality and Standards III process, I set out my requirements for transparency and auditability of the final agreed investment programme⁵. Throughout the Quality and Standards III process we have continued to promote these principles. Our discussions with SEPA and DWQR also lead us to conclude that the outputs to be delivered by each project must be clearly defined and quantified at the outset of the process.

It is important to emphasise that, as well as providing a mechanism for monitoring Scottish Water's performance, a detailed baseline brings other benefits for customers. Capital projects such as treatment plant upgrades or pipe renewal can have major impacts on customers and local communities. Customers are entitled to know about projects that will affect their locality. The existence of a detailed baseline programme will also ensure that Scottish Water is only held to account for delivering the agreed programme.

Changes to the baseline programme

A key lesson to be drawn from Quality and Standards II is that any investment programme will develop through time, as a result of changing priorities, revised policies and practices, new technologies and new information. Similarly, detailed analysis of requirements may reveal more effective and efficient solutions than were originally proposed. There is therefore a need for a mechanism that allows stakeholders to substitute projects into the investment programme, through a carefully monitored process, in exchange for other equivalent projects.

The process of substitution that was developed for Quality and Standards II is likely to form the basis of a suitable mechanism as we move forward into Quality and Standards III. Further consideration needs to be given about the way in which

⁴WIC 18 was a regulatory letter issued to the three authorities in May 2001. It sought a clear definition of the Quality and Standards II capital programme.

⁵These requirement were set out in a presentation to the inaugural meeting of the Wuality and Standards III project board on the 31 January 2003.

changes to the programme are communicated to customers. Issues will arise if schemes are taken out of the programme after the baseline investment programme has been published (as is our intention) and expectations about delivery of individual schemes have been raised. There could also be financial implications of changes to projects after the programme has been determined, for example for developers who base their development plans on infrastructure proposals contained within the baseline investment plan. Although these issues are likely to be manageable we will need to consult further with the stakeholder group about how best to proceed.

Our approach to determining a post-efficiency investment programme

Our approach will closely mirror the approach adopted by Ofwat in England and Wales. It will consist of four steps.

Step 1 is to ensure that Scottish Water provides us with a sufficiently detailed investment programme. Accurate costs will need to be estimated for each project and these will need to be consistent with the cost base examples that Scottish Water provides to us each year. The Reporter will play an important role in reviewing the cost estimates and their consistency with the cost base.

Step 2 will be to ensure that all of the projects that are included on the list have appropriately defined outputs and represent value for money. This will enable the quality regulators to choose to amend priorities slightly once projected costs for different projects become available.

Step 3 will be to calculate the efficiency target for the proposed capital investment programme.

Step 4 will be to add or remove projects based on their priority so that the investment programme is consistent with the maximum that the Minister concludes is deliverable. In practice, Step 4 will require further iterations of Steps 2 and 3 in order to define a final investment programme.

Appendix 2: Interim statement of Glas Cymru Policy for the Remuneration of Directors

Introduction

This interim statement of remuneration policy will be updated once the current review of Welsh Water's business plan for the period to 2005 is complete. Targets will be set by the remuneration committee of the Board which, in the light of the business plan, are challenging and focused on the priorities for the business determined by the Board.

Overview

The Board of Glas Cymru intends to implement a remuneration policy for executive directors which will create strong incentives to deliver benefits to water and wastewater customers.

Governance

The remuneration committee of the Board is responsible for making recommendations to the Board on the framework for executive remuneration and incentivisation lies with the remuneration committee. The committee comprises all the non-executive directors of the Board, all of whom are independent of the company management and none of whom have any financial interest in Glas Cymru other than fees paid to them as non-executive directors. The committee is chaired by Alison Carnwath, and has taken independent benchmarking advice from Hewitt Associates. The committee will ensure that the necessary disclosures are made in respect of remuneration policy and directors' remuneration.

These arrangements are consistent with the "Combined Code" of the London Stock Exchange. Under a new modification to its licence, the company is required to apply the Combined Code as far as is practicable.

Objective

The overall objective of the remuneration policy is to attract, retain, and motivate managers of the required calibre, in particular to apply incentive arrangements which align the interests of the individual with the interests of customers over the long term.

Executive Directors' Remuneration

In order to meet this objective for the executive directors' remuneration packages, the remuneration committee decided that a high proportion of maximum pay should be "at risk".

Specifically:

- base salary would be fixed initially below market levels (at or around lower quartile) by comparison with industry benchmarks;
- bonus arrangements would incentivise Directors and managers across a wide range of performance measures; and
- the proportion of base salary represented by maximum bonus would be set well in excess of market norms, so that the levels of maximum and achievable bonus would broadly align total remuneration with average remuneration paid by comparable companies.

Accordingly, the committee has fixed remuneration levels for executive directors in 2001/02 as follows:

Managing Director Basic Salary £175,000 Executive Directors Basic Salary £125,000

Basic salary will be reviewed annually by the committee. Maximum bonus is capped at 100% of basic salary.

Half of annual bonus will be payable immediately. The other half will be deferred for three years, but will be forfeited in the event that employment ceases in the meantime. Executive Directors have service contracts that are subject to twelve-month notice of termination.

Incentive Arrangements

Half of maximum bonus will be based on financial performance (measured by the growth in financial reserves). The other half will be based on how well the company delivers services to customers. Each will be is capped so it can contribute no more than 50% of maximum bonus potential.

Generation of financial reserves: growth in reserves has been chosen as one of the prime measures for incentivising management because it best captures the fundamental dynamics on which Glas Cymru's proposals have been developed. Improved performance and efficiency in the way the business is financed and operated will all be captured by growth in financial reserves. Since the main use of reserves will be to deliver lower bills to the customer, this is a direct and simple way of aligning the interests of directors and managers with those of customers.

Improved service to customers and the environment: The performance of directors and managers will be assessed against the "overall service performance" assessed and published by Ofwat annually for all water companies in England and Wales. This independent assessment of the company's performance across a wide range of customer service measures provides an uncomplicated framework which rewards improvement in performance compared with the previous year (reflected in Welsh Water's ranking) or penalises any deterioration in performance.

The non-financial performance assessed by Ofwat include:

- Water supply targets (e.g. interruptions to supply, restrictions on supply, and drinking water compliance)
- Sewerage measures (e.g. sewage flooding incidents and quality of effluent discharges to the environment)
- Customer service measures (e.g. speed of response to billing enquires and written complaints).

Other benefits

Executive Directors' have the use of an expensed company car and mobile telephone. They also benefit from participation in Welsh Water's pension and medical and life insurance schemes. Details of these benefits will be set out in the Annual Report to Members of Glas Cymru for 2001/2002.

Non-executive directors

The Board has also fixed the fees payable to the chairman and the non-executive directors for the next two years as follows.

Chairman: £140,000

Non-executive Directors: £ 35,000

Non-executive directors will receive no additional fees for membership of board committees or the undertaking of special responsibilities. They do not have contracts of service, nor do they receive any taxable benefits in kind (e.g. pension or health care benefits). However, the company reimburses reasonable expenses incurred by non-executive directors in carrying out their duties.

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

Appendix 3: Principles of charging

I would find it very helpful if the statement could address the following principles of charging that you would like to see applied during the next regulatory period.

The Executive's consultation, 'Paying for Water Services', rightly identifies that changes in the method of charging for surface drainage and for unmeasured customers cannot reasonably be introduced during the next regulatory control period. I accept that while significant further metering of non-domestic customers is unlikely to be justifiable solely on strict economic grounds, such a policy may improve business confidence in the equity of the charging system.

The preferred profile of prices

One potentially difficult issue is whether or not we should reduce bills for a customer group if we know that they will need to increase again (in real terms) in future years. A judgement needs to be made about whether price stability is more important than cutting prices in the short term. I would be grateful if the statement could set out your preference on this matter.

Phasing of significant changes in tariffs

The consultation puts forward a proposal that all significant changes to customers' bills should be phased. It is possible that a revenue settlement would allow significant changes to be introduced more quickly, without having any adverse impacts on customers in real terms. In other words, if bills to a group which is being impacted in a relatively adverse way are not increasing in real terms, would it be the Executive's/Ministers' preference that the change is phased in more quickly? This would avoid situations where we reduce a customer group's bills even though we know that this is unsustainable in the longer term and that their charges will ultimately need to rise again in real terms.

Unwinding cross subsidies

Many of the cross subsidies in the water and sewerage industry relate to harmonisation of charges and linking household bills to the Council Tax band of properties. Most utilities harmonise charges across their areas of operation. In many countries household water bills take account of ability to pay.

There are, however, some unintended cross subsidies. Unwinding cross subsidies will benefit some customers but other customers may have to pay more as a consequence. It will be important that the statement establishes the extent to which the relative contribution of each type of customer should change over the regulatory control period.

In my recent consultation document, 'Our work in regulating the Scottish water industry: The calculation of prices', I proposed that there should be eight or ten tariff baskets. Most respondents appeared to favour ten tariff baskets. We will also need to create a tariff basket to include secondary charges of Scottish Water that relate to the core business. I would therefore appreciate guidance on whether the impact of any tariff rebalancing between the domestic and non-domestic customers should benefit all types of customer within that class. I would also appreciate guidance about whether any such rebalancing should apply to large, medium and small users and whether it should apply to both water and wastewater (including surface drainage). I will use this information to inform the way I set price caps using the following matrix.

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Alan D A Sutherland Commissione

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

Tariff basket	Description	2005-06 projected	% share of 2005-06	% share of 2009-10	
		revenue	revenue	revenue	
One	Household water	£302,261,819	30.2%		
Two	Household wastewater	£326,709,197	32.7%		
Three	20 mm metered water	£30,597,959	3.0%		
Four	20 mm metered wastewater	£25,076,560	2.5%		
Five	Other metered water	£92,560,245	9.3%		
Six	Other metered wastewater	£38,156,223	3.8%		
Seven	Unmeasured water	£20,926,431	2.1%		
Eight	Unmeasured wastewater	£43,511,086	4.4%		
Nine	Surface water drainage	£75,722,502	7.6%		
Ten	Trade effluent	£28,124,027	2.8%		
Eleven	'Core' secondary income	£16,230,000	1.6%		
	Total	£999,876,047	100%	100%	

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Alan D A Sutherland Commissioner

Appendix 8

Cost of retail capital report from Ernst & Young LLP

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Report for The Water Industry Commissioner for Scotland	Discussion Document June 2005
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WICS Cost of Capital Report

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III ERNST & YOUNG

Ernst & Young LLP

George House 50 George Square

Private and Confidential

Water Industry Commissioner for Scotland Springkerse Business Park Ochill house

Stirling

FK7 7XE

Dear Sir

Scottish Water Retail - Cost of Capital

In accordance with our engagement letter, we have prepared our report in relation to the factors influencing the cost of capital in Scottish Water Retail.

Purpose of our report and restrictions on its use

This report was prepared on your instructions solely for the purpose of Because others may seek to use it for different purposes, this report should not be quoted, referred to or shown to any other parties unless so identifying the potential factors influencing the cost of capital in Scottish Water Retail and should not be relied upon for any other purpose. required by court order or a regulatory authority, without our prior consent in writing.

Any use such third parties may choose to make of our report is entirely at their own risk and we shall have no responsibility whatsoever in relation to any such use. This report should not be provided to any third Our report may not have considered issues relevant to any third parties.

parties without our prior approval and without them recognising in writing that we assume no responsibility or liability whatsoever to them in respect of the contents of our deliverables.

Scope of our work

27 June 2005

Mr A Sutherland

We have not sought to verify the Our work in connection with this assignment is of a different nature to that of an audit. Our report to you is based on inquiries of, and accuracy of the data or the information and explanations provided by discussions with, management. management. If you would like to clarify any aspect of this review or discuss other related matters then please do not hesitate to contact us.

Yours faithfully

Ernst & Young LLP

INTERNATA YOUNGThe UK firm Emet & Young LLP is a limited liability partnership registered in England and Wales with registered number OC300001 and is a member practice of Ernst & Young Global. A list of members' names is available for inspection at 1 More London Place, London, SE1 2AF, the firm's principal place of business and registered office.

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Section 1					2
	SWR will be a relatively small player in the UK water market. Initially of course it may be the sole retailer in the Scottish market. SWR is unlikely to have significant assets but may have a significant working capital requirement	The volatility of SWR's revenue streams, together with expected thin gross margins on basic services and its small asset base will limit its debt raising and debt servicing capacity. Therefore we would expect SWR to be a predominantly equity funded	business The return that such equity providers will expect will depend on the risk factors associated with SWR, including operating in a competitive environment, operating with uncertain revenue and being a relatively small company in the sector and in terms of raising financing.	A high level estimate of the return required based on the information available at present would suggest a return in the region of 12% post tax nominal.	
Executive Summary	SWR will be a relatively small player in the UK water is course it may be the sole retailer in the Scottish market. SWR is unlikely to have significant assets but may have working capital requirement	The volatility of SWR's revenue streams, together with expected thin a margins on basic services and its small asset base will limit its debt rai and debt servicing capacity. Therefore we would expect SWR to be a predominantly equity funded	business The return that such equity providers will expect will depend on the factors associated with SWR, including operating in a competitive environment, operating with uncertain revenue and being a relative company in the sector and in terms of raising financing.	A high level estimate of the return required based on the information available at present would suggest a return in the region of 12% post nominal.	副 Ernst & Youn G

Section 2

MICS Cost of Capital Report

ntroduction

The objectives of this review are to:

2.1

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- Identify an appropriate cost of capital and equity structure for Scottish Water Retail ("SWR")
- Consider the factors to influence management in defining the Retail Capital Structure
- Implications for SWR of the Scottish Water Regulatory and licensing regime
- 2.2 In looking at the cost of capital and equity structure for SWR, we considered the various publicly available information in the water sector and in other utilities companies and the methodologies that are available.
- 2.3 In the water sector there is a wealth of information on cost of capital in the OFWAT Final determinations for 2005-2010. This includes commentary on research performed by NERA on behalf of UK Water and OFWAT's own views on cost of capital. Whilst both parties have used a CAPM approach, OFWAT has taken a pragmatic view on the beta values to be ascribed, given the market volatility in recent years.
- 2.4 Whilst we have reviewed and considered the information available in the OFWAT report, the deficiency that it has for comparisons with SWR is that it is based on a regulated industry. Whilst SWR is going to be heavily influenced by Scottish Water as its regulated supplier of wholesale services, SWR will have a risk profile which includes a number of other factors, such as operating in a competitive environment, operating with uncertain revenue and being a relatively small company in the sector and in terms of raising financing.

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■ ERNST & YOUNG

Therefore, given that the water sector in England and Wales does not have any direct comparators for SWR, we extended our review to the independent energy retailers. The consolidation in the energy sector has been such that most of the large utilities are now vertically integrated and so the major retailers are consolidated within large companies and it is very difficult to identify the cost of capital of the retail parts. Whilst we did identify 4 independent energy retailers that might have provided a

comparison, 3 of them (Atlantic, Maverick and Enron Direct) have been

bought over in distressed circumstances by large utilities, leaving only

BizzEnergy as an independent retailer. However as this is privately

owned, financial information is limited.

2.6 Given the lack of obvious comparators, we have set out in section 4 what an equity provider might be looking for as a return, based on a reasonable long term equity return and then a commentary on the premia that would need to be considered to take account of the unique risks of investing in

WICS Cost of Capital Report

Overview of the Retail Industry

- competition authorities that the sector, where possible, is being opened The proposed introduction of competition into the retail non-domestic up to competition. This would be expected to lead to a drive towards business as it seeks to compete with the expected competition from opportunities in the newly deregulated market. It would also be expected that his would drive efficiencies in the existing SWR lower prices in the short term as new entrants seek to identify water and sewerage sector is intended to demonstrate to the external service providers. 3.1
- The introduction of competition into the retail non-domestic sector will provide a new set of challenges for SWR. It is expected that potential activities. SWR's customer base varies considerably in terms of size and competitors will no doubt look to target those larger customers provision of licensed services and in the provision of value added competitors will review the opportunities in detail, both in the that may be considered to be the most lucrative. 3.2
- Wholesale Price' although it may not be clear how this translates for price from Scottish Water. It is intended that there will be a 'single It is reasonable to assume that SWR will buy at Wholesale supply different sizes and types of retail non-domestic customers. 3.3
- opportunity for value added for straight supply. It may also be subject The difference between the Wholesale price that SWR pays Scottish Water and the revenue that SWR receives from its customers will be the gross margin. It is likely to be very thin as there is little to caps as a result of licence conditions relating to pricing. 3.4

These mainly flow from A report by Stone & Webster (Feb 05) has highlighted the fact that

Section 3

- competition to the retail sector would be expected to lead to significant reduction in the retail price, although this should be compensated for there is currently a considerable degree of cross-subsidisation between sewerage. Current industry thinking suggests that these numbers may by a reduction in the wholesale price and an increase in the wholesale be understated. If these numbers are verified then the introduction of retail to domestic and Stone & Webster has estimated these crosssubsidies on an annual basis as £11m for water and £30-70m for different parts of the Scottish Water business. price to domestic customers. 3.5
- There are a number of key issues most of which are linked which will impact the commercial performance of the retail business:

3.6

- suppliers being too much for the likely benefits that might be customers will see the time and effort involved in switching Customer inertia - the retail business will be hoping that gained in terms of potential cost savings
- Retaining customers the flip side of the bullet point above is that customers will be able to switch very easily between the minimum contractual period. As a result, potential revenues retail business and its competitors and there will be no could be very volatile and difficult to budget.
- proposed business and the minimal opportunity for value added for straight supply per the licence will mean that the gross Very thin margin - the open, competitive nature of the nargin will likely be very small.

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transfer for customers means that the retail business will need to be able to trim its cost base very quickly in response to a Need flexible cost base – the thin margin and the ease of reduction in customers/revenue

management is likely to be a key driver for commercial success for the

retailer.

3.11

Scottish Water, in its second draft business plan (April 2005) has

working capital requirement of the retail business relative to that wholesale bills on demand. The impact if this is to increase the stated that "The Licensed business will be required to pay its

> Need flexible debt/return structure - given that revenues can be accordingly, the financing and capital structure will need to be conditions. As a result it is likely to be heavily equity based. volatile and given the timing issues in reducing costs flexible to take account of sudden changes in market

the Licensed business will need to be in place on 1 April 2006, as bills incurred by the existing combined business and to lower the working capital required by the core business. Access to working capital for

then owing to Scottish Water will transfer at this point.

- comparators, our review of the electricity sector in England and Wales electricity market has been poor (eg Atlantic, Maverick, Enron Direct) has shown that the long term survival of independent retailers in the Having considered the issues noted above we can conclude that it is likely that a retail business will go for mainly equity funding, but it will need to consider the volatility of the market. When looking for and therefore the risk will need to be reflected in the capital return. 3.7
- However this will depend upon the commercial terms agreed between business, that SWR will have minimal working capital requirements. We have assumed, given the expected size and nature of SWR's SWR and Scottish Water. 3.8
- the end user may lead to timing differences between SWR's debtor and The relationship between SWR and Scottish Water needs to be seen to Water requires for providing water and sewerage services to retailers could have a significant impact, given that monthly billings are likely It is possible that normal commercial credit terms between SWR and be commercial and arms length. The commercial terms that Scottish creditor positions thereby necessitating significant working capital facilities. 3.10 3.9

to be in the region of £20-30m per month. Therefore working capital

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MICS Cost of Capital Report

What sort of return would these equity providers seek?

4.1 The return that an equity provider would expect would be built up from:

The return that an equity provider would expect would be built up from

Base of what is a reasonable long term equity return; and

- Add a premium to take account of the new market, the relative size of SWR, the issue of cross-subsidy, a volatile customer base and need to fund working capital.
- regulated return in the water sector and would then be flexed to take account of the further risks associated with being outwith the regulated part. Our estimate for an ungeared business, based on the information available would be an equity range above 7%, being that for a regulated business, but below 9.5%.

4. 4.

- 4.3 The premium that would then need to be added would need to take account of:
- New market the premium would need to take account of the inherent uncertainty around operating in a brand new market
- Relative size of SWR SWR is a relatively small business when compared to Scottish Water as a whole and when compared to water companies in England and Wales.
- The resolution of the issue of cross-subsidy is unclear at present and the analysis performed so far will need to be verified. If the Stone & Webster findings are verified then there is likely to be a downward pressure on prices and margins and thus returns to capital providers.

The return required by the equity provider will need to recognise that customers will be free to move at any time with minimal or no notice. The regulatory framework and how SWR is established will impact on SWR's ability to compete with potential competitors and thus impact on its risk profile.

Section 4

- The need to fund 1-3 months of revenue as working capital, together with recovery risks, will need to be factored into the expected return to equity providers.
- There are some specific characteristics of SWR that should reduce its risk profile and thus contribute to a favourable return for equity providers. These include:

 Operating in a licensed sector this should provide a level of stability that will prevent unexpected shocks. Controls over
 - stability that will prevent unexpected shocks. Controls ov potential competitors and over service levels will provide barriers to entry and thus some protection for incumbent operators;

 Predictable wholesale cost this will enable a retailer to
 - Predictable wholesale cost this will enable a retailer to establish what its principle costs will be.
- Customer inertia the water and electricity markets in England and Wales have shown that customers have shown a marked reluctance to switch suppliers, especially where the potential financial benefits are relatively small.
- 4.5 The key driver of the premium to be added would be the relative size of SWR and, taking into account the other factors noted above, we would consider that a premium of some 4% would be required by equity

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MCS Cost of Capital Report

What sort of return would these equity providers seek?

providers. This would give a required equity return in the region of some 12% post-tax nominal for an ungeared SWR business.

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

- 4.6 In order to identify a range in which the WACC of SWR might sit, we have made a number of assumptions about the shape of the SWR business and considered a number of scenarios around those assumptions.
- 4.7 The key base assumptions that we have made are that the cost of equity is 12% (based on the analysis above) and we have used a LIBOR rate of 5% based on current market rates for 3/6 month LIBOR.
- 4.8 We have then generated a base scenario (Scenario 1) which includes the following assumptions:
- Fixed assets of £40m to include the hardware and software associate with the customer interface and billing system.
- Working capital of £75m. This represents some 3 months of revenue for SWR, less an allowance for the fact that some revenue for standing charges will be paid in advance.
- The bank facility for working capital is assumed to cover 80% of working capital requirements, with the remaining 20% to be covered by the equity providers.
- The bank facility is assumed to be a 365 day revolver with a charge of LIBOR+0.6%
- 4.9 The WACC for scenario 1 is calculated as 8.66% nominal post-tax.

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4.10 We have then considered a number of variations on this base scenario as follows:

Section 4

- Scenario 2: the value of fixed assets to be transferred is set at
- Scenario 3: increase the working capital requirement from £80m to £100m
- Scenario 4: Increase the interest charge on the working capital facility to LIBOR+1%
- Scenario 5: combine scenarios 2 and 4
- Scenario 6: combine scenarios 3 and 4
- 4.11 The result of applying these scenarios is to produce a WACC range of 7.96% (scenario 2) to 8.87% (scenario 4).

WICS Cost of Capital Report

Decisions that may be relevant to Scottish Water Retail and the allowed return

Section 5

accuracy of the costing of that opex will directly impact the ability of

The allocation of opex between Scottish Water and SWR and the

SWR to make a reasonable return. Therefore it is important that the costs are correctly identified and allocated and that they represent an

efficient, achievable cost for the opex that SWR will need to incur

going forward.

5.1 Is there a licensed price-setting period? Would price be capped? What would be impact?

If there is a licensed price setting period then it will mean that SWR's major costs and revenues will be set by the Regulator. As a result its gross margin will be effectively fixed. Whilst this has the advantage of giving it certainty of its earnings, if the margin is too thin then the available return may not be sufficient to attract equity providers.

Going forward, the Regulator may decide to cap prices. This would prevent a retailer from imposing excessive prices on customers in the event that competition was slow to develop between retailers. Such an action would directly impact the gross margin that a retailer could achieve and would therefore affect an equity providers view of the returns that could be achieved.

5.2 How is restructuring of cross-subsidy going to be achieved?

The cross-subsidy issue noted above has a material impact on the non-domestic commercial sector. Using the most extreme numbers in the range noted in the Stone and Webster report, there could be a £80m redistribution of costs and therefore revenue away from non-domestic to domestic. This would have a significant impact on a £250-300m revenue business. The ability of SWR to set prices that ensured a reasonable return for equity providers will be severely impacted by the extent to which costs have to be reallocated and by the actual size of the reallocation.

5.3 Level of opex used to establish the Wholesale Price – is it a reasonable number to allow a dividend stream for SWR to be met?

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Appendix 9

Stakeholder information days

The Strategic Review process involved consideration of a number of issues that have important implications for stakeholders. Our methodology consultation work plan¹ explained that we intended to hold a series of 'stakeholder information days' throughout the process. At these meetings we provide information on progress with the Strategic Review and discuss relevant issues. We build the feedback from these sessions into the process.

The stakeholder information days are being held approximately every six weeks throughout the 18-month period leading up to announcement of the final determinations on 30 November 2005.

We invite a representative cross-section of stakeholders to attend, to ensure that we receive feedback from a broad range of interested parties. The meetings provide a key opportunity for stakeholders to engage in and influence the work of the Strategic Review.

At each meeting a note of what was said is prepared and the note is placed on our website. In this appendix we reproduce the notes of the meetings that have been held to date.

Stakeholder information days have been held on the following dates.

- 18 June 2004
- 6 August 2004
- 1 October 2004
- 26 November 2004
- 24 January 2005
- 17 March 2005
- 9 May 2005

We plan to hold further stakeholder information days on the following dates:

- 2 July 2005 (moved to 30 June 2005)
- 5 August 2005
- 19 September 2005
- 31 October 2005

Stakeholder workshop June 2004: Summary of the day and response to issues raised

As I [the Water Industry Commissioner for Scotland] explained at this initial workshop, Ross Finnie, MSP, the Scottish Executive Minister for Environment and Rural Affairs has commissioned the next Strategic Review of Charges. It will cover the period 2006-10. The Scottish Executive has also recently introduced a bill to the Parliament, which would change the status of a Strategic Review of Charges from advice to a determination. Such a determination could be appealed to the Competition Commission. I have been asked to prepare this next Strategic Review according to a tight timeline. The key dates in this process are:

- Publication of the work plan
 for the Strategic Review of Charges July 2004
- Publication of methodology consultation Late August 2004
- Publication of a draft
 determination of charges End June 2005
- Final determination
 (in light of stakeholders'
 representations)
 End November 2005

I am also expecting the Scottish Executive to publish two consultations on the principles of charging and the investment priorities for the industry. The outcome of these consultations will be important inputs to the Review.

If the Scottish Parliament approves the proposed changes to the regulatory framework, it is likely that Ministers will appoint a Water Industry Commission in time for that new body to respond to the representations of stakeholders to the draft determination of charges.

During the workshop, I outlined the importance we attach to a transparent process. I am keen to listen to the views of stakeholders and will look carefully at any suggestions of alternative approaches. In line with my

Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1, WICS, July 2004.

statutory duty, I will ensure that current customers will face charges no higher than they need to be to ensure a sustainable public sector water industry.

I have planned a number of stakeholder information days in addition to a number of planned publications and announcements in order to ensure that stakeholders can be aware of how work on the Strategic Review of Charges is progressing. I have attached a list of these stakeholder information dates for your diary below.

The first workshop necessarily focused principally on the background to this Review, on our timetable and plans for consultation. It was also helpful to discuss, albeit at a very high level, the key areas of our proposed methodology.

There were a number of issues raised at the workshops with stakeholders. These included:

- the work plan for the Strategic Review of Charges,
- the detail of the investment plan,
- the detail of Scottish Water's business plan,
- the financing of the industry,
- targets for levels of service,
- the impact of the principles of charging consultation.

The work plan for the Strategic Review of Charges

We intend to publish a detailed description of the work plan for this Strategic Review of Charges in the middle of July. This publication will detail each step in the process and provide an explanation of how it impacts on the final outcome. There will also be a description of the regulatory information we collect.

The detail of the investment plan

We agree that the investment plan of Scottish Water should be published and made freely available to stakeholders. We also recognise, however, that this plan cannot be set in stone and may have to be changed to reflect new priorities. To this end, we have developed a detailed process by which new projects can be substituted into the investment programme. We would expect that Scottish Water would publish any such changes as soon as practicable.

Our intention would be to publish the detailed investment plan for 2006-10 contained in Scottish Water's second draft business plan. This would be the first version of the plan that would reflect the Scottish Executive's consultation on levels of investment and the associated ministerial decisions.

The detail of Scottish Water's business plan

Our current intention is to require Scottish Water to publish an Executive Summary of their first draft business plan. Our response to this plan will also be published. The second draft business plan would be published in full.

The financing of the industry

In the methodology consultation, it is the intention to outline a number of steps to ensure that the financing of the industry is made more transparent and more immediately consistent with the situation in other utilities.

I also plan to commission a study into how private sector discipline in financing can be applied within a public sector financed industry.

Targets for levels of service

In the methodology consultation, I will seek the views of stakeholders about whether it is appropriate to establish targets for levels of service in addition to efficiency targets. The consultation will also seek to understand what customers believe those targets should be if they are to be established.

The principles of charging consultation

As noted above, the principles of charging consultation will be a vital input to this Strategic Review of Charges. This Office will respond to the consultation and highlight the implications for customers. At this stage, I would note that only improvements in efficiency or innovation can improve value for money for all customers. Changes in the structure and levels of tariffs may benefit some, but there will be other customers that will pay more as a consequence.

I attach significant importance to these stakeholder information days and I would be keen to receive any feedback or suggestions for improvements. Please also feel free to bring these events to the attention of others that you consider may have an interest. If you would like to give any feedback or require any further information please contact the office on 01786 430200 or by email catherine.gair@watercommissioner.co.uk.

Dates of future stakeholder meetings

Stakeholder meetings 2004	Stakeholder meetings 2005
6 August 10.30am	24 January 10.30am
1 October 10.30am	17 March 10.30am
26 November 10.30am	9 May 10.30am
	2 July 10.30am

Stakeholder workshop August 2004: Summary of the day and response to issues raised

Our Office held the second in a series of information days for stakeholders. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges.

These workshops play an important role in ensuring the transparency of the Strategic Review process and provide stakeholders with an opportunity to input to the Strategic Review.

At the second workshop we discussed the following documents that will form part of the Strategic Review process:

- Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10 Published – 21 July 2004
- Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10
 Published – 16 August 2004
- Publication of methodology for calculating prices for the Strategic Review of Charges 2006-10
 To be published
- Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10

To be published

 Publication of summary of methodology for the Strategic Review of Charges 2006-10
 To be published

All of the documents that we have published, and will publish over the coming months concerning the Review, reflect our intention to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of

proportionality, accountability, consistency, transparency, and targeting.

One of the areas discussed at the workshop was the Scottish Executive's proposals to strengthen our powers and structure. Currently, our powers are advisory – we provide advice to Ministers and it is then up to Ministers to make decisions. The Water Services (Scotland) Bill, introduced in June 2004, proposes a number of important changes to the regulatory framework, including granting our Office powers of determination and allowing Scottish Water a right of appeal to the Competition Commission. The Bill also proposes the establishment of a Commission to regulate Scottish Water, instead of being regulated by an individual.

There were a number of other issues raised at the workshop. These included:

- the billing of domestic customers,
- the expansion of networks,
- the determination of capital efficiency targets,
- the relationship between high prices and underinvestment in the Scottish Water industry,
- the status of PPPs with regard to borrowing by Scottish Water,
- how Scottish Water's ability to meet many requirements is determined,
- the civil engineering market in Scotland, and the size of the investment programme,
- how timescale issues between Quality and Standards III (2006-14) and the Strategic Review of Charges 2006-10 will be addressed.

The billing of domestic customers

The Water Services etc (Scotland) Bill includes provisions to introduce retail competition for non-domestic customers only. There are no provisions for retail competition for domestic customers.

The expansion of networks

The core activity of Scottish Water is, broadly, the provision of wholesome drinking water and safe disposal of sewage.

The expansion of networks (eg connection of a new housing development onto the national network of pipes and sewers) is considered a core activity of Scottish Water.

The determination of capital efficiency targets

The size of the investment programme will likely be limited, in part, by logistics – the size and number of projects that can reasonably be managed. Our role is therefore likely to focus on maximising what can be delivered by Scottish Water within a manageable programme.

Water companies are getting better at risk management going hand in hand with strategy planning. For Scottish Water to improve at this, they need to be following a moving target.

Strategic planning, scooping of solutions, project appraisal, risk assessment, procurement and project management all impact upon the cost of project delivery. Our efficiency assessments and targets will need to examine all of these areas of performance in detail. Regarding procurement, we use the same benchmarking technique as Ofwat, looking at 30–40 types of detailed cost elements to determine relative efficiency with companies in England and Wales.

Our targets for Scottish Water will focus on efficient delivery, rather than delivery to deadlines. We believe this focus is in customers' interests. We recognise however that binding legal deadlines (for example linked to EU directives) exist for parts of the investment programme.

The relationship between high prices and underinvestment in the Scottish water industry

The available evidence shows that investment over the period 1989 (privatisation) to 2006 (end of Quality

Standards II) is very similar north and south of the border, even when we take account of the relatively greater efficiency with which investment has been delivered in England and Wales. Consequently, there would appear to be no truth in the assertion that prices are high in Scotland to pay for historic underinvestment.

It may be the case that the emphasis has been different in Scotland. We are able to compare the condition of assets on a like-for-like basis north and south of the border. The evidence suggests that above-ground assets are in better condition in Scotland, whilst water mains appear to be in a worse condition than most, but not all, companies.

Asset maintenance is a major portion of Scottish Water's annual capital investment and this is likely to remain the case. Our view is that it is customers' interests that Scottish Water has adequate funding to ensure that assets are properly maintained.

The status of PPPs with regard to borrowing by Scottish Water

The question arose as to whether PPPs (Public Private Partnerships) fall under the borrowing requirements of Scottish Water. This is a question of loans versus contracts. Any borrowing by Scottish Water is from the Government. PPPs are partly borrowing instruments, as there is an annual requirement to pay. In that limited sense, they do fall under the borrowing requirements of Scottish Water. However, they do not feature in Scottish Water's annual interest payments.

How Scottish Water's ability to meet many (quality and environmental) requirements is determined

This is partly through the Quality & Standards III 2006-14 consultation being carried by the Scottish Executive, which will feed through into the Strategic Review process itself. All concerned stakeholders have a role to play in commenting on the investment issues raised in that consultation.

The civil engineering market in Scotland, and the size of the investment programme

The size of the investment programme is obviously still to be determined (through Quality and Standards III) and will ultimately be an issue for Ministers to decide upon, but Ministers have said that the outcome needs to be "practicable and achievable" for Scottish Water. The ability of the civil engineering (and related) markets to deliver projects across Scotland could however be a limiting factor on its size (along with limits on what is a manageable programme – see above).

How timescale issues between Quality and Standards III (2006-14) and the Strategic Review of Charges 2006-10 will be addressed

Although the Review will only cover the period 2006-10, we will look ahead beyond 2010, especially when making final determinations or recommendations. The business plans that Scottish Water will submit cover the period up to 2015. We expect Scottish Water to phase its investment programme over the period 2006-14 in line with quidance from Ministers in January 2005.

We attach significant importance to these stakeholder information days and I would be keen to receive any feedback or suggestions for improvements. Please also feel free to bring these events to the attention of others who you consider may have an interest. If you would like to give any feedback or require any further information please contact the office on 01786 430200 or by email katherine.russell@watercommissioner.co.uk

Dates of future stakeholder meetings

Stakeholder meetings 2004	Stakeholder meetings 2005
1 October 10.30am	24 January 10.30am
26 November 10.30am	28 February 10.30am
	17 March 10.30am
	9 May 10.30am
	4 July 10.30am
	5 August 10.30am
	16 September 10.30am
	31 October 10.30am
	16 December 10.30am

Stakeholder workshop October 2004: Summary of the day and response to issues raised

Our Office held the third in a series of information days for stakeholders. The main aims of these workshops are to inform stakeholders about the progress of the Strategic Review of Charges 2006-10.

These workshops play an important role in ensuring the transparency of the Strategic Review process and provide stakeholders with an opportunity to input to the Strategic Review.

At the third workshop we discussed where the Office stood in terms of the Strategic Review process methodology documents that will form part of the Strategic Review process:

- Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10
 Published – 21 July 2004
- Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10
 Published – 16 August 2004
- Publication of methodology for calculating prices for the Strategic Review of Charges 2006-10
 Published – 22 September 2004
- Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-1

To be published – 7 October 2004 (Operating costs). This volume was published on this date.

 Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10

To be published – TBD (capital expenditure)

 Publication of summary of methodology for the Strategic Review of Charges 2006-10
 To be published – TBD All of the documents that we have published, and will publish over the coming months, concerning the Review, reflect our aim of making the Strategic Review of Charges 2006-10 as open and transparent as possible. This is in line with our commitment to the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency, and targeting.

The Commissioner confirmed that Volume 4 (methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10) would now be published in two separate volumes. The operating expenditure volume would be published on the 7 October 2004. However, since Scottish Water had not yet provided final clarifications on outstanding issues on their investment programme, nor their forecast for delivery of their capital programme by end March 2006, the publication of the methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10, for capital expenditure, would have to be delayed until a later date to be determined.

By the end of October, Scottish Water should have submitted their first draft business plan – on 25 November 2004, the Commissioner will publish a high level summary of this business plan.

The Commissioner stressed that the days of significant prices increases were over for now, unless there was a significant increase in the current planned level of investment when the Quality and Standards III investment programme begins.

The workshop gave stakeholders the opportunity to ask the Commissioner questions concerning documents already published or raise other issues about the Strategic Review of Charges.

There were a number of questions and issues raised at the workshop. These included:

- The likely level of trade effluent price increases compared to other water and sewerage charges.
- If water charges for domestic customers are effectively a tax (owing to the link between water charges and the Council Tax), do they really reflect cost to customers on their usage?

- How should Scottish Water really be funded from taxes or revenue?
- Will Scottish Water hit their operating expenditure targets for Quality & Standards II?
- When it comes to consent issues, what are the Commissioner's powers?
- Is Scottish Water improving in levels of service (ie billing and meter reading) and how do they compare with potential competition in these areas?
- What will the introduction of a regulatory capital value (RCV) mean for the regulation of Scottish Water?

The likely level of trade effluent price increases compared to other water and sewerage charges

The Water Services etc (Scotland) Bill includes provisions that will add the regulation of trade effluent to the remit of the proposed Water Industry Commission. Although the regulation of trade effluent is not currently within the Commissioner's remit, we collect and monitor information about trade effluent charges on an aggregate basis.

In our methodology we explained our proposals to create:

- 1. A tariff basket for trade effluent; and
- Standard trade effluent customers (this will allow trade effluent customers to identify which group they belong to and when and how their charges will change).

Trade effluent charges are likely to rise. Historically, the costs of trade effluent appear to have been recouped from other sewerage and surface water drainage charges.

The Scottish Executive has asked an economic consultancy to assess the level of unintended cross subsidies that exist in the water and sewerage industry in Scotland. The policies of harmonisation and linking

domestic bills to Council Tax bands are examples of intended cross subsidies.

A Scottish Executive official explained the content of the Executive's 'Paying for water services' consultation. This official also outlined the proposed changes to the regulatory framework. The proposed Water Industry Commission would have the power to determine charges, just like Ofwat, and Scottish Water could take their case to the Competition Commission.

If water charges for domestic customers are effectively a tax (owing to the link between water charges and the Council Tax), do they really reflect cost to customers on their usage?

This is a political question. Direct payment increases the security of funding to the industry and should ultimately lead to improved efficiency in the management and operation of assets. It is important to note that there is no discrete network separating domestic from non-domestic customers.

It is not straightforward to establish cross subsidies and it is not a function of the current charging arrangements. For example, some Council Tax band G & H households will pay more than some businesses with an identical usage profile. Such households should switch to a meter.

The costs to serve a customer could be based on two methods:

- Easy way: Infrastructure basis
- Complex way: Infrastructure basis and volume basis.

The difficulties in allocating costs robustly are partly a function of each customer's usage pattern being different and there are further complications that arise from customers that only use Scottish Water's supply as a last resort for all or part of their needs. This is likely when a company uses an off-network water source but requires a back-up supply from the public network.

How should Scottish Water really be funded – from taxes or revenue?

In terms of contribution, 39% of Scottish Water's revenue comes from the non-domestic sector (15% public sector; 18% commercial and 6% small businesses). The remaining 61% comes from the domestic sector.

For a metered customer, an extra bath would cost approximately 7p.

If there were no standing charges, the extra cost of a bath would be 17p.

Metering is therefore not likely to change people's usage for price reasons. It may influence consumption because of a 'fear factor' of how much might this being going to cost.

It is also worth drawing attention to the current level of leakage (currently 48%). The likely economic level of leakage is likely to be at or around 30%. Scottish Water's current investment programme sees Scottish Water being funded for the last four years to allow them to reduce leakage. However, there does not seem to have been any real progress.

The fourth methodology volume to be published on October 7 2005 suggests that it may be appropriate to set leakage targets for Scottish Water.

Will Scottish Water hit their operating expenditure targets set in the Strategic Review of Charges?

Scottish Water should achieve the operating expenditure targets set in the Strategic Review of Charges. They should manage to reduce operating costs to the targeted £265 million. In its first two years, Scottish Water has reduced its operating costs by 20%.

However, Scottish Water has not used as much of the £200 million 'spend to save' as we had expected.

To deliver the capital investment programme in full in the 18 months that remain of the Q&S II programme,

Scottish Water would have to deliver approximately £55 million of improvements per month – in April 2004, Scottish Water had to spend at a rate of £50 million per month on Q&S II projects to deliver the programme. The increase in spending required is unprecedented in the water industry.

The Commissioner is open to suggestions about a potential 'early start' programme for Q&S III projects. This would have to take account of the risk of further delays in Q+S II.

When it comes to consent issues, what are the Commissioner's powers?

The Commissioner has no remit in consent issues. There are areas of the definitions used by Scottish Water to complete the asset-related tables in the Annual Return, which need to be improved upon, but this is part of the Q&S III process. This will ensure that each project has a very clear set of outputs – and that each output in this set is delivered.

Water Services Etc. (Scotland) Bill

The Scottish Executive is setting out a clear scope and framework for companies to enter the industry. It will be possible for competitors to enter the market for retail services. This is a relatively discrete area of activity.

We are proposing to keep the wholesale pricing structure as straightforward as possible. There may be a number of separate arrangements between Scottish water and new entrants depending on the scope of activities that the retailer would want to do.

The potential benefits for customers could include:

- a choice of retailer/payment options customers might in addition be offered additional services by new entrants (subject to licence conditions); and
- better performance from the existing regulated corporation – there is evidence from other utilities that new retailers put new pressure on the regulated natural monopoly element of business.

Is Scottish Water improving in levels of service (ie billing and meter reading) and how do they compare with potential competition in these areas?

Scottish Water's levels of service performance has been mixed, on two levels:

- Anecdotally there have been improvements in some cases in the last 3-4 years.
- Complaints performance here would appear to be getting worse. The number of complaints to this Office has increased but this may in part be due to customers' awareness of the complaints process.

What will the introduction of the regulatory capital value (RCV) mean for the regulation of Scottish Water?

The introduction of the RCV will enable straightforward comparisons of the financial health of Scottish Water to other utility companies to be made. It will also offer greater transparency on management performance to regulator and customers alike.

We attach significant importance to these stakeholder information days and I would be keen to receive any feedback or suggestions for improvements. Please also feel free to bring these events to the attention of others who you consider may have an interest. If you would like to give any feedback or require any further information please contact the office on 01786 430200 or by email katherine.russell@watercommissioner.co.uk

Dates of future stakeholder meetings

Stakeholder meetings 2004	Stakeholder meetings 2005
26 November 10.30am	24 January 10.30am
	28 February 10.30am
	17 March 10.30am
	9 May 10.30am
	4 July 10.30am
	5 August 10.30am
	16 September 10.30am
	31 October 10.30am
	16 December 10.30am

Stakeholder workshop November 2004: Summary of the day and response to issues raised

Our Office held the fourth in a series of information days for stakeholders. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges.

These workshops play an important role in ensuring the transparency of the Strategic Review process and provide stakeholders with an opportunity to input to the Strategic Review.

At the fourth workshop, the Commissioner summarised the timeline for the Strategic Review of Charges 2006-10. He also discussed the main findings that had been drawn from the consultation process, particularly from Volumes 3 & 4:

 Publication of methodology for calculating prices for the Strategic Review of Charges 2006-10

Published – 22 September 2004

Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10

Published – 7 October 2004 (operating expenditure)

The workshop provided an opportunity for attendees to ask the Commissioner questions regarding the Strategic Review of Charges 2006-10.

There were a number of questions and issues raised at the workshop:

Ofwat have previously allowed increases in funding for companies to cope with unexpected increases in costs such as energy costs. Would this be allowed for Scottish Water in the new regulatory period?

Customers need as much stability in their prices as possible and this Office would be reluctant to enter into too many interim determinations.

It should be noted that Scottish Water may ask for an increase in funding in an interim determination but may actually receive a decrease in their funding. A case in point is Anglian Water who a couple of years ago asked Ofwat for such an increase, but actually received a decrease in their funding.

We consider Scottish Water's representations on the costs that it incurs in its baseline and the expected changes to that baseline. To the extent that these costs are justified, they are included in Scottish Water's baseline costs.

With regard to connection charges and the increase in social housing provisions, would the Commissioner's Office have a role in advising Government on this?

No – this is purely a social policy matter for the Scottish Executive.

There may well be some development constraint impacts resulting from the finalised Quality and Standards III programme, but this is not a matter for the Commissioner's Office to control or regulate.

This being the case would the Executive then expect Scottish Water and the Commissioner's Office to facilitate improvements to aid social housing policy?

No.

With regard to establishing Scottish Water's cost of capital, how easy or difficult a process has it been trying to benchmark to English and Welsh companies?

Just as difficult for Philip Fletcher to benchmark Dwr Cymru to a multinational utility company. There is no real difference in the process followed, or the problems experienced with cities (eg Glasgow compared to Manchester) or geographical differences.

How would the Commissioner's Office respond if the Scottish Executive wanted development constraints removed? In particular, if this happened after the start of the next regulatory control period, how would the regulatory mechanism cope?

We will shortly be receiving the Ministers' guidance on the high level objectives to be set for the industry for the period from 1 April 2006 to 31 March 2010. This is likely to set out the approach to resolving development constraints for the period.

If, hypothetically, Ministers were to seek a different approach to development constraints, this could be handled in a number of ways. Firstly, through an interim determination mechanism, it would be possible to reset the price control to take account of the revised requirements.

Alternatively, and less transparently, any increases in costs could be funded through increased levels of debt – this would impact upon Scottish Water's financial ratios.

Another alternative would be to substitute the required new projects for existing projects in the programme. This would require the approval of all of the stakeholders – (SEPA, DWQR, the Scottish Executive, Scottish Water, this Office).

This question stresses the importance of the Ministerial Guidance in setting the investment objectives for the industry.

Investment in Glasgow may be more efficient that investment in Sutherland – are factors other than cost per head taken into account?

Yes – by efficiency we mean delivering the same projects for less. If there is a requirement in Sutherland that meets the objectives set for the investment programme then Scottish Water's task is to deliver this project as efficiently as possible – not to seek to deliver an alternative but cheaper project. High costs do not necessarily mean inefficiency. South West Water in

England has some of the highest costs of the companies but is not inefficient.

We attach significant importance to these stakeholder information days and I would be keen to receive any feedback or suggestions for improvements. Please also feel free to bring these events to the attention of others who you consider may have an interest. If you would like to give any feedback or require any further information please contact the office on 01786 430200 or by email katherine.russell@watercommissioner.co.uk

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Stakeholder workshop January 2005: Transcript of the day

On Monday 24 January 2005 a stakeholders' workshop was held in our offices. Present at the meeting were the Commissioner, members of staff from the Commissioner's Office and a number of stakeholders.

The Director of Corporate Affairs for the Commissioner's Office chaired the meeting.

A note of the meeting, taken by an independent company, is reproduced below².

The Commissioner started by intimating to the meeting that we were at a stage where we had a first draft business plan from Scottish Water. A summary of it has been published by Scottish Water and in highlight terms it is talking about an increase of around 5% above the rate of inflation based on a capital programme of about £2.25 billion, not including an element of overhang from the Quality and Standards II period – ie the current regulatory period which would take the capital programme to be delivered in four years 2006-10 to something just over £2.4 billion.

We have looked at that business plan in some detail. We consider that having looked at it the required price increase will be somewhat lower than the 5% real price increase that Scottish Water suggested in that plan. In fact, we would expect there to be a marginal real decrease in prices over the period. It is fairly early to say what size the capital programme will be. Ministers are due to talk on that exact subject on 10 February in a statement to Parliament. So, we will wait to see what exactly they have to say. Certainly there would be questions about the likelihood of Scottish Water being able to deliver efficiently and effectively a capital programme of £2.4 billion over four years, given that in this current regulatory period they will struggle to spend about £1.8 billion over the four years. So, an increase of 33% would seem to be unlikely. It would seem to be further unlikely given that other companies south of the border of similar size have never successfully either wanted to or delivered a capital programme of that sort of size. The two that are the same size are Anglian and

² From January 2005 we decided to include an electronic substantially verbatim account of what was discussed at the stakeholder information days.

Yorkshire. The largest capital programmes they have ever delivered are £1.75 and £1.81 billion respectively. So, £2.4 billion is interesting territory.

£2.4 billion indeed has been achieved I think 12 times out of a possible 48 by the three companies which are larger than Scottish Water, ie Thames, Severn Trent and United Utilities. Actually, it has never been delivered by Thames and so only United Utilities and Severn Trent have ever attempted to deliver a capital programme of that sort of size.

So, in short there is probably not that sort of increase required. We were going to talk today in large part about efficiency targets that we would be setting ranges around today. In this first draft business plan Scottish Water has made a very large number of representations about the unfairness of the Ofwat models, the five models, and they have just asserted unfairness about our alternative model without explaining why it is unfair.

Their analysis has suggested that based on 2003-04 they were in fifth place overall in the UK with their analysis. This was an interesting assertion given that also in the business plan they were going to be improving at 8-10% which would have taken them to frontier-leading position, with further improvement due in 2005-06 according to their business plan and they would have been even further then into the frontier. Clearly the representations that have been made, whilst some of them no doubt have some substance, have been rather on the over-ambitious side. The reason that we have not published is that we are looking at all of those comments which have been made in some detail and we will comment on them in great detail, but I think we can safely say that there will be a quite substantial efficiency gap at the end of this process. Scottish Water will have some realistic but challenging targets to achieve. When that is taken into account the prospect for prices is one where we think the watch word over the next four to eight years will be 'stability', by which we mean that they will not differ markedly from the rate of inflation. It is also quite likely that there will be a degree of limited rebalancing between household and business sectors, with household charges going up marginally more than business charges.

But having said that we do not think the household charges will go up in real terms.

The meeting was opened for questioning at this point and one of the stakeholders asked the Commissioner about one of his closing remarks viz: "The degree of rebalancing between domestic and non-domestic sectors".

Would you care to give us off the top of your head what the numbers are, what they will be at the beginning of the regulatory period and what they might be at the end of the regulatory period?"

The Commissioner explained that as things stand at the moment we are about 63 and a bit per cent of revenue from domestics.

The same stakeholder asked the Commissioner to confirm if that was in the current year or at the end of this regulatory period. The Commissioner confirmed that it was at the current year and will be for this charges scheme going forward for the year 2005-06.

The Commissioner further explained that 63.6% or something like that which obviously means what? 36.4% from businesses we would have thought that a shift in the order of around £30 million to £50 million is probably likely over the regulatory period. So, in very broad terms, let us take the mid point of that -40 – you are talking about 4% extra from domestic customers.

The big question obviously effectively boils down to who pays the cost of support to vulnerable households. That is what your whole principles of charging boils down to in the end. It costs something of the order of, depending on how you want to calculate it, between £400 and £600 to supply a standard domestic-sized connection with the water and sewerage service and you have got 50% of households in Scotland which are paying between £220 and £250 a year. So, that difference has to come from somewhere.

Likewise you have got higher banded houses paying £680 or something like that against a cost of £400, £500 or £600. So, clearly paying more than cost. Small

businesses in general are now somewhere in that range, having previously been markedly below it and if a large business is using a lot of water and sewerage they are probably contributing a lot of money but less in percentage terms. The biggest single contributors would appear to be those who use a lot but do not qualify for discounts. So, they are using under 100 million litres a year. So, the big losses are the 50/100 million litres a year.

A stakeholder from Scottish Water asked the Commissioner if the programme that he had spelled out, that it was not possible. Knowing that Scottish Water are perhaps behind on community too but they did start late and possibly in the next four-year period with Scottish Water Solutions up and running they will have a lot of experience to build on and perhaps it is possible to meet that and he also wondered how much of that £2.4 billion must be spent to actually meet regulatory requirements from Europe.

The Commissioner answered this question by explaining that regarding the 2.4 billion it is always possible to spend the money. We could get through 2.4 billion if we tried hard enough. I'm not quite sure how we would go about it yet but we would have a damn good try if we were given it and did not have to be accountable for how we spent it.

Yes, there is an argument that is being made that everything will be all right on the night and that the investment programme will get delivered, but approaching the end of the third year of a four-year regulatory period and there being a requirement to increase expenditure by 30% year on year, ie in year four on what is achieved in year three, in order to be something approaching 300 million short of the delivery target for the regulatory period as a whole, would suggest to me that in a sense to set £2.4 billion as a target may well be achievable but it would entail less challenging efficiency targets and may actually entail less outputs get received by customers despite more money being spent, which would seem to me to be a very foolish thing to do.

Is the market capable of delivering that?

Yes, but the laws of supply and demand are such that you increase demand to the contractors and the contractors are going to put their prices up because there will be bottlenecks somewhere in the supply chain which will drive those prices up.

So, are there reasons to spend money in terms of compliance?

Yes, absolutely, just as there are reasons to spend money on compliance in England and Wales and anyone who takes even a cursory look at what has happened south of the border will see that most companies recognise that they have got projects that will run well beyond 2010 and to comply with either water quality or water environment legislation. So, it is not going away anywhere. It might be changing in nature.

A stakeholder from Black & Veatch stated that the Commissioner had mentioned at the previous briefing well before Christmas the £260 million under-spend and he had just mentioned £300 million now.

The Commissioner confirmed that £260 million is what it said in the business plan. The latest response we have had to a letter puts the most likely estimate at £289 million, with a range that goes up to £380 million if we are not mistaken with this being the worst case. This was confirmed by the Director of Cost and Performance from the Commissioner's Office.

The same stakeholder asked if that overhang would go into Quality and Standards III and dump something else out of Quality and Standard III?

To which the Commissioner replied, "Inevitably".

The same stakeholder asked if the Water Framework Directive had made much of a difference yet and when informed by the Commissioner that this was not so he further enquired if that was still to come.

The Commissioner explained that yes, there were some elements in the SEPA programme, which are beginning to tackle some of the early milestones, but most of what

SEPA would like to be doing will be in the 2010-14 area. There is still a lot of work to be done as far as we can see and on the evidence that has been brought to our attention to gather the information to be able to deal with much of the catchment management that is at the heart of the Water Framework Directive. There has been less progress on that than we had hoped to see and there has been less spending of the spend to save resource that was put in place, partly in order for Scottish Water to have better information about its assets and the operation of those assets than we had hoped. We do not think they are even halfway through spending the money yet.

The Director of Cost and Performance confirmed that they were probably about halfway through but that we have not seen the money used to in particular improve knowledge of the asset base which I think is disappointing.

The Director of Corporate Affairs asked what the money has been spent on. To which the Commissioner replied "Principally severance costs – an average we believe of £53,000 per employee?"

The stakeholder from Scottish Water asked about the Framework Directive, the compliance date being 2012 which is right in the middle of the next period which tends to assume that the works are going to be – the compliances are not going to be met if the Water Framework Directive were reasonably started in this next period, whereas in England and Wales it is a slightly different timetable.

The Commissioner confirmed that as far as we are aware most companies in England are seriously concerned about the view that was taken on the Water Framework Directive and pushing things back into the next period. There were a few belated additions, relating to fresh water fish and stuff like that, which were quasi-Water Framework Directive-type projects we suppose, but we do not think the position in Scotland is hugely different to that in England and Wales. Whether that is right, wrong or indifferent as with other policies is for the Scottish Executive to decide what the ministerial priorities are going to be.

Another stakeholder asked if he could bring up the sustained development issue, which has been discussed in the Environmental Rural Development Committee in Parliament and the guidance, and get the Commissioner's views on it and also the Water Services Bill. The Commissioner's views were as follows.

Our view has been that the Water Services Act is important. It clarifies the roles that the regulator has very considerably and makes it clear that for which the regulator is responsible versus that for which Ministers are responsible. Because the previous situation was in the advisory capacity that ultimately we had a very small amount of power in approving or disapproving charges schemes, but only to the extent that it was consistent with the advice Ministers had accepted, modified or rejected, and that led to degrees of misunderstanding as to who was responsible for what.

So, the essence of the Bill introducing a determinatory regulatory regime with rights of appeal is a very positive step forward.

There was a suggestion that the Commission be required to apply sustainable development to its activities. This strikes me as a slightly strange request because on the one hand the Commission is being asked to be a technical functionary, a bean counter, if you like, counting up how much it all costs, but if you apply, if you say it has to apply the principles of sustainable development then it has a quasi-policy making or at least interpretation role which is not particularly consistent with the idea of objective price setting.

Therefore it seems to us – and the last we heard from the Executive – that it is really in the province of Ministers in the guidance that they will give on the 10 February to say which principles the Commission should or should not take into account in setting prices, because effectively the question of what is sustainable development is a political one and it is not really for unelected bean counters to be interpreting that, it seems to me.

A stakeholder asked if the English and Welsh bean counter does have a duty under the Water Act. To which

the Commissioner explained that the situation is slightly different because if you peal away the determinatory relationship that exists in Scotland it is still different to what will exist in England and Wales, and it is a function of the industry in the public sector versus the private sector. In the public sector Ministers are making a decision about how much this body can borrow as a maximum. Ministers are making the decision about de facto, by saying that it must borrow from the Public Works Loan Board, what interest rate it will borrow at. If there were a situation - and it is not going to happen this time - but in the future you could imagine a situation where it might be prudent for Scottish Water to borrow more than Scottish Ministers are going to make available. It could be prudent. At the end of this regulatory period if the capital programme were to continue at a number in the high 500s it is not impossible, modelling it out, that the amount of borrowings which are required will be such that Scottish Ministers do not want to pick up that particular tab - possibly. Were that to be the case there would be an upward adjustment to prices because the ministerial borrowing limit would be an absolute level and that would never happen in England and Wales within the regulatory settlement because there would be a cost of capital adjustment because it is a market-driven cost of capital, and the markets would be expected to fill the gap in funding, whereas in Scotland in the public sector model that extra bill would fall on to the customers. As we say it is not going to happen this time. It does not look like it will happen in 2010-14, but beyond that it might start happening. It depends what happens with public expenditure.

Now, you can see therefore that the role of Ministers in Scotland in the public sector is quite different to the role of Ministers in England and Wales. Yes, they are both setting social priorities. Yes, they are both setting environmental priorities, but the Scottish Ministers are also taking on this decision about how much is it going to make available for public expenditure in lending terms to Scottish Water and they are also balancing within that decision other priorities that they have and ultimately potentially the level of customer charges that will ensue.

It would therefore be strange, given the extent of involvement that Ministers still have in the system, even

if not in the actual price-setting process within a regulatory period, for them not to be the ones interpreting sustainable development, whereas in England and Wales it is a little bit different because ultimately things are being interpreted and will be reacted to by the markets.

The stakeholder from Black & Veatch asked about nonregulated business and if the business plan is purely about regulated business or non-regulated business?

It was confirmed by the Commissioner that we have absolutely no responsibility whatsoever to do with any non-core activities as laid out in the Act.

The same stakeholder asked if the Commissioner saw it having an impact on the regulatory business? To which he replied "No, because we have got ring-fenced regulatory accounts in place now. They may try spending money on it but it won't come from customers."

The Director of Corporate Affairs stated that within the proposed Bill we do have the retail function. The Commissioner added that it was different non-core and that we suspected that what the stakeholder meant was the insurance business and various other sundries viz contracting and consulting.

A stakeholder asked the Commissioner to confirm what he meant about that it would not come from the generality of customers. The Commissioner explained that it would not come from customers as in customers in the core business, but that one would assume that if they go into a new business activity they have got a customer who is going to pay. He also confirmed that it would be a matter for Scottish Water and the Executive as to how this would be financed.

A stakeholder asked if they would be able to raise commercial borrowing?

To which the Commissioner confirmed that it was going to be exactly the same. That it would be a matter for Scottish Water's Board and the Executive to decide. There is no remit, and it is a very good thing that there is no remit, for us to be considering the funding and the

success or otherwise of venture. Anyone who has done any form of business appraisal can tell you that ventures in practice often look quite different to the appraisal that is done before they are set up, and one of the big costs that are often forgotten on projects is the cost of ending the project. The exit strategy can be very expensive. The CEGB's nuclear programme would be an interesting example of when the terminal cost was omitted from a valuation.

The same stakeholder asked if the Commissioner meant that the financing would not come from customers through water charges, but that it could come from customers through other charges.

The Commissioner clarified that it would not be of the core business, not for a core service and that if a business decided that it wanted to buy an additional service from Scottish Water it would pay a charge for that service.

Now, it will be for Scottish Water to ensure that it is covering its costs on that, because the transfer pricing rules that will exist for services, any services provided by the core business to another arm of Scottish Water, will be very tight – are very tight.

A stakeholder asked if trade effluent was not part of the core activity and would pricing on it be regulated?

It was confirmed that it will become part of the core activities as part of this Act and that price caps will be set for it.

Continuing the stakeholder asked if Scottish Water were free to set any price that they like for treating, say, tankered waste?

The Commissioner confirmed that for tankered waste yes they would be able to sell that on a commercial basis because it would be non-core activity. It would only become a core activity if it were discharged to sewer and treated in that way. He also confirmed that tanker activity that comes through a treatment works would not be regulated if it had not come through the sewer to get there. The stakeholder continued to ask if Scottish

Water have any way of showing how they justify their prices and that they are not subsidising non-core activities?

The Commissioner confirmed that the answer to that is yes. If they are engaging in a non-core activity and providing a service to a non-core business, under the transfer pricing rules they will have to show how much they are charging, why they are charging that amount for that service and any non-core service that is being fed off the core asset in some way. This will all be very transparent and be all put on the public record and it will come into effect from April 2006. You could ask for it now, from Scottish Water. We suspect that Scottish Water would probably try to place some kind of commercially confidential comment, which would come back, but whether it would stand up of course is another question.

The same stakeholder continued to explain that he was in an effluent treatment plant which dealt with tankered waste and Scottish Water had been aggressive with their pricing. He wondered how they could justify that or whether they were being anti-competitive by what they were doing?

The Commissioner replied that the other aspect of Scottish Water is that they will be being required by the Scottish Ministers to charge an averaged price in Scotland. So, not the marginal cost of that particular treatment works. So, their costs for tankered waste treatment at treatment works will not depend on that particular treatment works but rather on the average costs across all the treatment works in Scotland, which should significantly discourage the sort of activities you are talking about – should. There is nothing that we can do – understand this correctly – there is nothing we can do to stop Scottish Water operating a loss making activity. If they want to operate a loss making activity they can do that. If they have got an owner who is prepared to put capital in it for the Scottish Executive, then they can do that. Now, it might not be good from the taxpayer's standpoint, but there is nothing the regulation would do that would stop that.

So, just because these rules are being put in place does not mean that Scottish Water will not engage in

behaviour that somebody may perceive as being anticompetitive, and it would not remove the need for challenge under appropriate rule of law if that is what you thought was happening.

A stakeholder from Scottish Enterprise stated that they obviously have quite a heavy investment plan over the next few years, quite a lot of the sites that they are dealing with which are quite constrained and they are quite keen to find out the views if there are any views that could be forthcoming on how we can take away some of these constraints from the sites.

The Commissioner intimated that it is his understanding that Ministers are intending to pursue what they have suggested in consultation, which is that developers of sites would be responsible for the downstream asset connection costs, but where upgrades of works or major sewers or water mains were required, then that would be a cost met by Scottish Water and paid for by the generality of customers.

There would appear, certainly in some of the work that has been done, to be a considerable amount of money available in the proposed investment plan to remove those strategic constraints. One of our concerns is the fact that the progress on improving asset information has been as slow as it has, because until that programme of work has been advanced further than it is now many of the development constraints that are perceived to be present may not actually be present. For example on the water supply side with leakage running in excess of 40% across Scotland as an average it would seem unlikely that those constraints were real on connection to the water supply.

Well, it is 43% if you want Scottish Water's information, but the assumptions which are made to get to 43% would rather suggest the number begins with a 5 rather than 4, because you have to believe that unmetered use of water in Scotland has been going up at 5% per annum for the last 20 years or something. Information from Scottish Water states that the average household consumed between 140 and 170 litres a day. There have been estimates but they are all in that range, litres per head per day we were given information from Severn

Trent and based on their estimates, which are long standing estimates, usage for unmetered customers is something in the range of 120/125 litres per person per day.

Incidentally, metered use per person per day in the Severn Trent area is 105 litres. So, if you add that into the equation as well, and assume that the amount of water being put into supply is correct, then the leakage number is truly horrendous. Possibly all you are suggesting, is that we need a leakage target in Scotland

With which we would absolutely concur.

The same stakeholder took the Commissioner back to non-regulated business and stated that he understood that Scottish Water in conjunction with Thames might be getting awarded a project with the MOD. He asked how the risk for that would lie within the business, if they lost a massive amount of money?

The Commissioner confirmed that it is a risk for Scottish Ministers and you as the taxpayer as well and confirmed that if they made a big profit out of it they, the Ministers could decide to make some free money available to the core business, but they could not, per se, cross-subsidise it.

They could not do it visibly but somebody else could do it by another route for example the Ministers could do it but Scottish Water could not do it. So the ring fence works in both ways. And it is not like it is permeable one way or the other. Ministers are going to have to think about a number of issues, not just the cost of capital if they start charging on commercial projects to Scottish Water. It is one thing allowing the public natural monopoly access to Government borrowing, effectively the Government cost of capital for the natural monopoly element. That would appear to be defensible under competition law simply because it is not replicable, but any other activity in which Scottish Water engages whether it be the retail activity within the new legislative framework - the tankering of waste - or project Aquatraine - would require Ministers to think very carefully about the cost of capital that they will apply to that particular activity and they will require Scottish

Water if they do not go, as David has pointed out, to the markets.

If they go to the markets it is easy, but that would require Ministers to sanction going to the markets. If not, and if we were wanting to challenge Scottish Water's behaviour in a competitive market, one of the first things we would be looking at would be how much they are paying for their funds.

A stakeholder asked if on the basis of what has been said, was there a good understanding of what the level of development constraint is purely and simply because of work at the moment in Glasgow East End which is suffering in terms of...and is there a kind of a pressure coming in from local authorities because of this as well?

The Commissioner confirmed that there is an extensive list, which now exists, that has come from the local authorities primarily but other stakeholders as well identifying sites where somewhere on a hierarchy of development it will be developed as soon as the infrastructure is there it might be developed at some point in the future. There is a considerable amount of money potentially going to be made available short of the full amount, but we are talking over the next four years versus a list of projects which I think is for the next ten years, but I think about half of the total costing that came from the local authorities is likely to get funded. It is a very considerable amount, simply because the local authority amount is likely to not just be the strategic costs but some costs developers would be expected to pick up.

Until we have proper handles on what is happening in the water supply network and where we are with treatment capacity and sewer capacity, it seems premature to be rushing to conclude that the development constraints issue is as bad as it is currently perceived to be. We are not saying it is good. We are just saying that we need to be very careful that there are not alternative ways of solving the problem within the local area by redirecting flows or something, before we just say that there is a development constraint.

There was an example in Perth two or three months ago now where there was a major development constraint preventing the building of several hundred houses where on examination it was found that you could redirect waste in a different way in the sewer network and the development constraint was removed without any funding at all.

So, this is not hypothetical. This is real; there are going to be development constraints out there, which could be being solved now at virtually no cost.

We have been asking Scottish Water about this subject for longer than I care to remember, because one of the things being a naïve economist who did not know much about the water industry in November 1999, we asked for information on things like this and no one knew, literally.

So, there has been a lot of progress made in terms of gathering together information in that sense of assets, but not as much as should have been made and as was said earlier we made money available in the last regulatory settlement precisely for them to improve knowledge of the operation of assets and less has been done on that front than we had hoped.

Until it actually happens we are still going to have these constraint sites. However, there is a way you can solve that which is by spending money, but you do need to spend the money. You can't solve the problem by not spending money.

We cannot enforce or put timescales on these things and if we do that we are starting to tell them how to run their business. We try and do it by putting budget constraints around them which make it economically attractive for them to solve the problems in an economically efficacious way, but we cannot actually tell them, do this, do that, nor would you want the regulator to tell them how to manage the business.

In effect, what we are saying is that every problem, whether it is real or apparent, has to be treated on an individual basis. Another stakeholder asked if that treatment essentially would probably involve political

pressure in the first instance in order to establish whether or not there is a real constraint or whether as you said with careful examination it could be shown not to be?

To which the Commissioner explained that if the Government system worked in a perfect way, you would have some regional operations or assets people saying that we think there is a constraint, questions would get asked within the Executive management at different levels to challenge whether that was the case or not. Questions should be being asked at senior management or Board level challenging those conclusions if they are involving the spending of money, and ultimately non-Executive directors/Scottish Ministers as the owner and shareholder should also be challenging the way in which the business is delivering service and the way in which it is operating. We don't think there is a priority list. We do think there is a list that exists and there are indications on the list as to how likely the development is to happen in terms of time - ones which are fairly certain versus the ones which are more aspirational, shall we say, but no one has sat down and decided that this site in Clackmannshire is ahead of this site in Falkirk.

Ultimately someone has to make that decision but we do not know who is going to make it. Probably in effect Scottish Water is making it.

The Director of Corporate Affairs stated that it is who shouts the loudest and the stakeholder from Black & Veatch asked if a part of it is driven by the developer.

The Commissioner intimated that there will be Scottish Water being put in a position of being forced to have to react to a situation and that is not likely to be an effective allocation of resource.

The Director of Corporate Affairs confirmed that going forward there would be a defined investment programme. The Commissioner also intimated that he did not know if there will on development constraints.

He further stated that we do not think that anyone is going to tell us that Glasgow is more important than Edinburgh or Edinburgh more important than Glasgow or Falkirk is more important than all of them. We do not think anyone is going to tell us that.

With regards to a list of the investments which are going to be carried out, on development constraints we are not sure. We are sure that there will be a list of areas that have been identified as being constrained and where there will be some money available for solving the problem. Whether anyone will actually have allocated the sum of money to the specific projects and said that if there is only money for these 10 then it is these 10 and if you've got money left over then here is number 11.

A stakeholder asked if there was no incentive to do that?

The Commissioner replied that there might very well not be.

The same stakeholder then asked that if it doesn't happen in an overt way it is certainly happening in reality, because constraints do arise when as you have said with your example of Perth certain political pressures arise to resolve them and they can only be solved in one of two ways: one by not spending money which is fine, no problem, and the other is by spending money and if you spend money on one development constraint then there is less for another. So, even if there is no process that can be seen by everyone in a transparent fashion on paper or whatever there is still a process going on all the time. That is presumably driven by political considerations?

The Commissioner explained that he suspected that the "He who shouts the loudest" philosophy will probably continue to apply. This is potentially problematic because in the absence of good quality information identifying those areas which could be made unconstrained by the application of better asset knowledge, you may end up spending money in areas where you don't need to have spent money to solve the problem simply because there is money available and there is a constraint, and that would be from the perspective of Scotland, inefficient, and it may lead to less constraints being removed than could otherwise have been removed with that amount of money. That ultimately will put charges up - well, it will ensure a higher overall level of charges than would otherwise have applied. This therefore will have a bearing on our responsibilities which is one of the reasons why we will ask - we haven't yet asked, but we are in the process of asking - the Reporter to comment on whether Scottish

Water is, with the various area studies and the extent to which it has made use of that information in compiling its investment plans, and we will use that information with great care in setting prices.

The same stakeholder then asked if the Commissioner could talk on the subject of what assumption Scottish Water have made on their business plan and what assumptions you have made about the effect of licence competition from the non-domestic sector.

The Commissioner confirmed that Scottish Water have made absolutely no assumptions at this point in their first draft business plan. At the time when we issued guidance to them on what should be in the business plan in June last year, the plan due at the end of October, Scottish Water felt that there was sufficient uncertainty about the progress of the Water Services Bill that they didn't want to be commenting on what was going to happen with retail in that draft business plan.

They have subsequently given a very short high-level business plan to Ministers that we suspect will need reworking in some detail over the next several months. In terms of what we are looking at, we gave evidence to both the Finance Committee and the Transport and Environment Committee that we believed that of the average business customer's bill something of the order of 15% relates to retail services. Retail services are everything from the collecting and processing of money, the issuing of the bill, the management of the contract, but also down to if a premises got flooded because of a sewer incident or a water main incident, sorting out that particular problem as well.

So, there are things which... basically any activity which is customer facing is defined as retail and so within that that is why you get a number of that sort of order. The costs – Scottish Water's costs in metering customers are all retail costs for example.

We have looked at – what we have begun to look at what we think the scope for efficiency is in different activities is, and we have looked at additional costs that may be incurred by Scottish Water wholesale as a result of the separation happening, and we are in the process of identifying costs which we suspect will disappear as a result of the separation happening.

Clearly one of the costs that will go away – sorry, will be higher for Scottish Water's retail business is its cost in capital, because it will be in be competitive market and the cost of capital will have to be set to reflect the fact that it is operating in that environment, but until we have finalised what that cost of capital is and finalised whatever assets are going to be transferred from Scottish Water Wholesale into Scottish Water Retail and what liabilities may follow those assets, it would be too early to say what the exact impact will be but is this going to have a material impact on customers bills overall? The answer is most definitely not. Will the competitive market ultimately drive savings for business customers? The answer ought to be yes. So, it should be a one-way bet, not like a risky one. It would be our assumption that nothing could happen before halfway through the regulatory period. The market opening is likely to be in April 2008. The separation of Scottish Water's retail activity from its wholesale activity is likely to be in April 2006.

The stakeholder asked if the retail business would be funded from the Government and was informed by the Commissioner that it might be but that is a decision again for the Scottish Ministers.

But if the Ministers decided to make funds available, their own funds available, they would be obliged under competition principles to charge commercial rates. We suspect at this point that Ministers would probably prefer to believe that they could charge a premium to their own and just do things much the same away as they have always done them. We suspect that once they think about the detail of managing a proper arm's length credit agreement with a subsidiary operating in the competitive market they may decide that it would be rather more sensible to let the banks do it, but we will see.

Stakeholder workshop February 2005: Transcript of the day

On Friday 11 February 2005 a stakeholder workshop was held at the Holiday Inn, Stirling.

The Commissioner and the Director of Corporate Affairs from WICS were in attendance, along with stakeholders from Water Watch Scotland; Black & Veatch; Unison; the Federation of Private Business Forum in Scotland; Dundee Anti-Poverty Group; Scottish Water, Water UK and Scottish Health Care.

A note of the meeting, taken by an independent company, is reproduced below.

The Director of Corporate Affairs chaired and opened the meeting as follows: As outlined in our work plan that we published in July 2004, today's workshop has been arranged to look at the impacts of the Ministerial Guidance that was issued on Wednesday. The Guidance outlines the principles that our office has to apply and take into account in the Strategic Review of Charges 2006-10. We will just go through the principles outlined in the Guidance. The Commissioner will talk through the principles.

The two detailed parts of the Guidance which are the principles to be applied in charging and then information about investment were handed out to the stakeholders and the Commissioner addressed the meeting as follows: We will probably start with the charging one first because we think it is probably the one that most people are most concerned about most of the time. We think the first bit that is underlined in this is in point 5 which is just the bit about timescales and that is just so that makes sure everyone's clear to what is happening. Basically, we will get a second draft business plan from Scottish Water on 20 April. That will include Scottish Water's view of what it needs to deliver on the ministerial objectives, both in terms of charging and in terms of investment. That document will then be reviewed by us alongside other information sources and will be turned round in a draft determination of charges on 30 June this year. Following that there will be a period then where with that document in the public domain and indeed Scottish Water's business plan in the public domain, stakeholders have the chance to comment on the answer and the framework that has been established. They have three months for that until 30 September and then the Commission, which will be in place by that point, will make whatever changes it considers necessary to that draft in light of representations and publish a final version, at this point scheduled for 30 November 2005. If Scottish Water does not like that final determination they can or will be able to appeal it to the Competition Commission who could change the answer. If the Competition Commission were to change the answer that would not affect prices in the 2006-07 financial year. The 2006-07 financial year prices would be set on the basis of the final determination irrespective of there being an appeal. So, the appeal would only alter prices in years two, three and four. They may choose to alter prices in two, three and four a bit more to compensate for year one if it considers such is necessary, but 2006-07 prices are fixed and will be fixed from November 2005.

This review will be a price-capped review rather than a revenue-capped review. Last time what we did was set revenue caps for Scottish Water and ultimately the changes in tariffs and changes in the customer base meant that people's bills could change by a different amount than the revenue cap. This time we are eliminating that possibility by setting a series of price caps. There will be 11 price caps underpinning the review. There will be a price cap for household unmetered water customers, household unmetered waste water customers and then there will be price caps for, effectively, businesses on rateable value, water and waste; price caps for surface drainage. There will be price caps, two different types of price caps, for metered watered users, those who have basically household usage characteristics, ie a 20ml meter or less and those who have bigger meters, and the same on the waste side. So, each of those groups will have a much more clear view as to what is happening to their prices over this regulatory period.

On 2 December we wrote to Ross Finnie, a fairly long letter which is available on our website, talking about a number of issues but one of them was the result of the

financial analysis that we had done and the prospects for the review. This was based on some fairly complex modelling but, basically, looking at statistical distributions of potential outcomes and merging all of those together in order to get the likely range of prices on any combination of circumstances. Without boring you with technicalities, there was something like half a million different scenarios run which allows a fairly good quality statistical distribution of prices with different combinations of levels of operating costs and capital costs and whatever to be included. That showed that it quite combination an unusual required circumstances, in fact a very unusual combination of circumstances, in order for prices not to be able to be held in real terms. At this point, what we are saying real terms means RPI. So, there is a trend generally to think more in terms of consumer price inflation rather than retail price inflation. This time when we say stable prices we are meaning retail price inflation. Now, having said that, that's the number we can be certain about at this point and we would hope, obviously, that it could be a bit better than that.

What the Minister has responded to that letter, because that letter also talked about levels of investment and in particular the very high level of investment that has been required of Scottish Water relative to companies south of the border and the deliverability of that investment, the Minister has asked for the largest capital programme to be included in a price settlement that is consistent with the efficient delivery of that capital programme. Now, there are various things that will go into that. One will be the historical experience, another will be the quality of Scottish Water's information and systems of planning and another will be the ability of the contracting market to meet the requirements on it without pushing prices up in capital. So, that is what is going to underpin the revenue section.

A theme of the Guidance is that Ministers want to ensure that prices are stable, that prices are affordable. It seems to me eminently sensible given that we can afford to do that and still enjoy the benefits of a large investment programme, that this would be one of the principles that Ministers have set. Ministers, however, have been helpful and sensible in that they have made

it clear that they do not want decisions to be taken in this regulatory period which would compromise the sustainability of the industry over the medium to longer term. In other words, we do not want to run up debt now to keep prices down so that future generations of customers pay considerably more as a consequence of us having had charges too low. So, the aim is for the stable price environment to not just be something that customers can look forward to in the 2006-10 period, but on the assumption that we get our sums right, on the assumption that there are not further huge increases in capital programmes going forward, that should equally roll into the next regulatory period as well.

A stakeholder stated to the Commissioner that "it's good to hear there's going to be stability because this is what we didn't have a couple of years ago, but there are people who are left, particularly small, commercial water users or non-domestic because it affected charities as much as it did small businesses. We were left with huge increases two years ago and nothing has been done to address that. Now, you're saying that in the future that will not happen again but it did happen in the past and some of them feel it is unfair because what they are doing is when you compare the bills they're paying on their business premises with what they're paying in their houses and as one person put it to me in Aberdeenshire, he said, the trouble is, he says "I'm paying £450 for a standpipe" and he says, "I pay £450 for my house", he says, "and I've three children that are having baths and we have dishwashers and all sorts of things on 24 hours a day and I'm paying the same thing for my house", and I said, "Well, why don't you appeal?", and he says "What they'll probably do is put my house up". So the thing is he was in a position of being able to compare with his domestic bill and he felt that in his business he was being treated unfairly. Now, are there any means by which if somebody has that feeling that it's an unfair charge they can appeal against that?

The Commissioner explained that if they were metered, then the only avenue they would have would be the rateable value component of their bill, which probably is a relatively small part. If they are not metered then the appeal is through the rateable value system. The issue that arises is that in an environment where you want to

have customers being equitably treated then you need some form of broad, and we mean broad, activity to do with geographical averaging and all the rest of it. That will typically mean that households, most households do very, very well out of the system because with the link to Council Tax bands that exist, those people who are in Band A and Band B are getting a service very considerably below the cost of providing that service. Now, some of that cost is a social cost that the whole customer base is meeting and a good portion of it comes from the Band G and Band H households that are paying considerably above the cost of providing the service. At this point there is no particular move, no obviously discernible move from higher banded households to move to meters and most of them would be better off if they were to choose to do that, they would face lower bills. So, it is a circumstance where, effectively, the small business, the connection is what costs the money, the ability to draw water, basically, to whatever level someone requires through whatever connection they've got, that is what is costing the money, and the standpipe is basically the same size as what goes into your house just in the house you make a lot more use of it. So, we know it is, in a sense, counterintuitive that the household bill is less than the water bill, that is not a reflection of the costs that are being incurred, it is a reflection of the social policy of the Scottish Executive to have bills linked to the Council Tax for households.

We think two of the key points in the Principles of Charging Guidance are point 20 and 21. Point 20 is one of these points that coming from where we come from as economists it seemed to us something that was completely obvious. You do not ask customers to pay twice for the same thing. However, that is not the way this industry in Scotland has worked over time. This industry in Scotland has quite frequently asked customers to pay for something and then come back the next year to say, "Oh, we didn't quite get to that project so we'll need more money for that project" and so, in effect, customers have in Scotland quite frequently been asked for money for the same thing on many different occasions. The example we always hear from SEPA is the Alloa Sewage Works which regular as clockwork used to appear in Central Region's investment

programme and regular as clockwork used to appear in the East of Scotland Water Authority programme. Whether it has guite been done or not, no one was really very sure, but each year it was an element of why the bill had to go up was Alloa Sewage Works. So, what we have now got is a very clear statement of ministerial policy that customers are not going to be asked to pay twice for the same thing and we are going to ensure that by having very detailed lists of investment projects, they will be published and they will be on our website. They will be sorted by local authority area so that both councillors and local people can know (a) what's going to be done, (b) who it's going to be done by and (c) what exactly is going to be done, and as a consequence we would be much more hopeful that there will be a good quality of policing of that investment and that we will be able to ensure going forward that if it has not been done we can continue at the end of the regulatory period and beyond the regulatory period to hold Scottish Water to account for delivery of that particular investment. So, we think that is an important principle to have got established.

The second one is also important which is that the Scottish Executive is now saying very clearly that it is not going to pay twice either. So, there is not an option as there has been as recently as a couple of years ago for Scottish Water to access the funds separate to the decisions on revenue that were taken by Ministers and now will be taken by the Commission. That is important because that means that Scottish Water has got a budget comprised of revenue and an access to new debt and to deliver the levels of service that it has got to deliver and that means there is no bale out clause of going to the Executive unless there is a clear demonstrable reason outwith management control for the delivery of the level of service. So, that should protect customers very considerably from the risk that more funding gets used, more interest charges get incurred and, therefore, bills go up in the future which is what has happened in the past.

Point 23 is important because Ministers are making it clear here that the average charges about which they're talking not increasing in real terms is on the average. This gets further developed later when we start talking

about the unwinding of cross subsidy between households and businesses but, for example, it is possible that metered water charges go up a bit above inflation and metered charges go up a bit less than inflation so it is on the average that this will come through as unchanged. Now, there is no obvious reason that we are aware of as to why there should be great imbalances either within the particular tariff basket, so, let's say, as to why a 50mm meter should go up more than a 250mm meter. We are not aware of any particular reason why that might be the case, but it's not impossible there could be an economic case that was brought forward and that does happen within a tariff basket, but there may be an issue with surface drainage pricing that comes out later in this Guidance.

Point 24 is just re-emphasising this point about we do not want prices being held stable if it compromises long-term prices. It is an important point. It is something that was a problem within the industry. As recently as the year 2000, West of Scotland Water Authority used to make an issue of the fact that its charges were lower than Thames and the lowest in the UK and that was a source of pride but it was only being achieved by delaying bits of investment and by borrowing at a rate which was not sustainable. For whatever reason, West of Scotland Water Authority officials had chosen this comparison with Thames and it was a big deal. So, it is important that we do not get into that sort of mindset.

A stakeholder asked the Commissioner "but surely that means that whilst we have the principle of stability that in practice it may not be stable because in order to avoid the situation where debt is going to build up there may have to be an increase which would be above the rate of inflation?"

The Commissioner replied, "No, debt will continue to increase. It is just it will increase in a manageable way without the financial ratios beginning to impinge back on revenue."

The stakeholder continued to state that he took that point but that in the Guidance it states that it does not wish stable charges to be secured at the expense of Scottish Water's longer-term financial sustainability. That means that if it does impinge financial sustainability that the prices could be going up by more than inflation, and whilst that might be the intention in practice it could be different.

The Commissioner confirmed that theoretically, yes, but the modelling we have done would suggest that that is such an unlikely shot that we think a non-runner in the Grand National has more chance of winning that race than prices have of going up.

The stakeholder asked if he had the Commissioner's word?

To which the Commissioner replied, "Yes."

In point 25 the Scottish Executive has said that it will make debt available of up to £182 million per year in terms of new borrowing. It has also said that the Commission in the final determination will set a level of borrowing that is sensible below that cap. So, it does not mean that all the £182 million gets used. What will be used is as much as is consistent with maintaining the financial sustainability of the industry. So, a lot of that will depend on the size of the investment programme and it will depend on the mix between genuinely new incremental investment and an investment which is effectively replacing worn out assets, a depreciation type investment. The former, it is sensible to borrow significantly against, the latter it is not. That level of borrowing will also have to cover some of the cash flow consequences of things like development constraints and the reasonable contributions from Scottish Water to developers and it will also cover issues perhaps around changes to the way in which PFI contracts get managed. But we will come back to PFI because we think it is potentially quite a big issue of the investment area. There is real progress, in terms of where the Executive now is in terms of affordable charges for low-income households. It is pleasing if not a little bit surprising that some of the ideas that some of us were discussing about three or four years ago now, about extending discounts, now seem to be possible when they weren't three or four years ago. Now, it is clearly quite a good thing, at least in our view, that the 25% discount is now available to everyone on Council Tax benefit as opposed

to just single adult households.

A stakeholder asked the Commissioner "Just to be absolutely clear because it is slightly unclear to me from here, the 25% discount for single person households is in place but all households on Council Tax benefit will receive 25% discount on their water charges?"

The Commissioner confirmed that this would be pro rata if you are on Council Tax benefit and that everyone who is a single person will get it. He also confirmed that it was his understanding that if you get 50% Council Tax benefit you would get 50% and 25%.

He further explained that it was not capped at Band D and that if you were on Council Tax benefit and on Band H, which will probably trouble some pensioners, for example, then you would still get this. It is important to note however, the caveat in point 33, which is that the temporary relief scheme will die by 31 March 2006. Now, the impact of that is that those on Council Tax benefit in a higher banded house will see probably quite a substantial increase in 2006-07 notwithstanding the fact that they are getting the 25% discount and the reason for that is that if you've been in, let's say Band G you've had your charges brought down if you were on Council Tax benefit to £240, I think, £255 this year and that will not now happen. So if you're in Band G and you're paying say, £600-ish, you're going to get your 25% discount coming down to £450 but you won't be being capped at £250 any longer, but that's just the implication of what's here, so let's be guite clear on that, but that's government policy, it's not something that we've got any remit in.

In point 37, the Executive identified the extent to which cross subsidies should be unwound. The figure that's been included is £44 million a year. The analysis that underpins that is available on the Executive website. It is a fairly detailed and fairly mathematically complex bit of work and what it tells you is that there is a range but that £44 million is a fairly safe number within the range to unwind such that domestic customers do not get disadvantaged too quickly.

A stakeholder asked the Commissioner if he was comfortable with that research work as it wasn't

commissioned by him. He asked him if he had a view on whether it was robust, to which the Commissioner confirmed that it was not commissioned by us but commissioned by the Executive with it being as robust as the underlying information would have allowed it to be.

We think the underlying information is largely dependent on accounting systems of Scottish Water. As an economist, I am always really a bit sceptical of using accounting costs to measure economic cross subsidies but that's what every economist would say just about, but given the methodology that they chose to use we think it was a quite reasonable bit of work. We think anomalies did get shown up that were in the way that Scottish Water allocated its costs but that's covered later by saying that there needs to be more work done on this going forward. Will there be more to be unwound over time? Our suspicion is yes and that's simply because this £44 million is addressed purely on the water side of the equation and does not cover either the surface drainage components or the waste water components. It is also fairly clear from some of the work that is in that report that on the trade effluent side there are benefits going to trade effluent customers which, potentially, shouldn't be going to trade effluent customers and probably at the expense of waste water customers but, you know, there's a long way to go on getting this right because historically so much of this has been based on decisions of politics rather than of economics.

A stakeholder asked that if £44 million in terms of reduction in charges to non-domestic premises was effectively going to be handed back and questioned where the £44 million was going to come from?

The Commissioner explained that it would come from domestic customers having slightly higher increases than business customers.

The same stakeholder continued to state that bearing in mind that there is a price cap so it looks as though that £44 million is going to have to come from efficiencies, or as an added efficiency.

The Commissioner confirmed that this was not so, that it was an overall price cap and that within that what will

happen, is that, for example, if domestic bills were to go up (do not take these figures as anything other than an example) that if domestic bills were to go up by 2% compound over the period that would raise about 8.5% more on the current £600-odd million that comes from domestic customers, so about £50 million, and it doesn't then take much in the way of mathematics to work out that in a period where the domestic bill had gone up 8% over four years, 2% per year, the non-domestic bill would go up about 1.5% over that same period and that exercise would have unwound that to be a cross subsidy at the end of the period.

Businesses can look forward to price increases which are lower than households but if we go on, to point 41 and what we have shown is that we do not expect there to be any reason why average household charges, and by this we would qualify it by saying we look on metered households in the same way as we look on the metered business. So, the 800 or so domestic meters that are around in Scotland, you know, would be slightly different on this, they would actually be better. The average household charge will not go up at greater than the rate of inflation. So, if you read that and you take into account what has been said about the £44 million being unwound, then that is telling you that in nominal terms business charges are not going to change very much on the average. So, they will be going down in real terms.

A stakeholder stated that the Commissioner had made a remark about that there may be a cross subsidy between waste water customers and trade effluent charge customers.

The Commissioner confirmed that he had said that it was a comment that was made in the Stone & Webster Report.

Point 42 is a useful one because it is making clear that the benefit of the £44 million needs to be spread equally amongst non-domestic customers. So, all businesses and indeed those metered households that get treated, as businesses will be marginal beneficiaries as a consequence of this £44 million of switch.

Point 44 is again an important one, because what it says is that the Executive is basically keen that we do not further increase the incentive to move to a meter for higher banded households. It is already attractive but were that to be made any more attractive it could begin a process which has begun to very negatively impact on domestic rateable value customers in England and Wales where the switch to meters has pushed the rateable value prices in England and Wales up. So, the Executive is making it clear that that is not something that they want. What does that mean? It probably means that in particular for smaller business where the tariff baskets would be shared with metered domestic households for the water and waste water components that the smaller businesses will see their reduction in bill come primarily through surface drainage and roads drainage charges.

The Commissioner was asked by a stakeholder if there was going to be any incentive at all for businesses to move on to meters?"

The Commissioner confirmed that no particular incentive other than there is a stated policy that all nondomestic customers where at all practicable will be metered. The issue of metering is clearly a fairly complex one. At the current time in Scotland we have a leakage problem, which is significant. We are losing a huge amount of water in the distribution system between treatment and available use for customers and Scottish Water's own estimate is about 43% at the moment. Most independent estimates would be something significantly in excess of that, therefore, saving a few litres of tap is yes, important, but in environmental terms a lot less important than fixing the leakage problem at least to an economic level. You've then got the incentive of the meter on customers' behaviour and there is clear evidence, from England and Wales that the mere fact that you install a meter changes people's usage patterns. That's a pretty much one-off set function change, but the actual cost, let's say, of a bath for a metered water customer is about 7p for the water. So, in most cases if people properly understand what the actual marginal of the volumetric charge for the water is, they're not going to have a bath, they're not going to have a bath because of the 7p and even if you were to switch to a fully volumetric recovery

basis for charges so you've no standing charges at all, that bath would cost you 17p rather than 7p. So, you've got to be fairly careful about what the actual price incentive for use of water actually is. There are systems in other countries where people get metered up to a certain level and once they get to a certain level they start facing charges of 50p a litre or something for the water coming through the tap. If you want to go to a system like that then that's fine but no one really discussed that and until we've got far more people on meters in the country it would not be possible to discuss in real terms. It's a complex issue metering, one no doubt that as the next four years continues and the Executive's policy of rolling out meters to businesses begins to get more and more discussed, that will become more and more of an issue, we would suspect. Equally, it will become more and more of an issue as the environmental pressure for Scottish Water to reduce its leakage increases.

A stakeholder asked what the estimate at the moment, of the number of businesses in Scotland that are already on meters, to which the Commissioner confirmed that it was about 50,000 businesses are on meters at the moment out of 140,000.

The stakeholder confirmed that the actual number was about 80,000.

The Commissioner continued to explain that there would be a substantial proportion on those unmetered that you couldn't actually put a meter in today easily as there would be something physically that would make it difficult, shared premises would be an obvious one, shared supply pipes would be another.

Point 49 is important because there will be a fair amount of noise around the changes in the arrangements for paying for the costs of local connections. The package that the Executive has come up with is a sensible one. It brings Scotland into line with the rest of the UK and it effectively is asking a developer to pay the costs of connecting to the network. Apart from those the part 4 costs which are the water treatment works, the sewage treatment works, the source, etc, etc, which would remain social costs, it also brings the situation in water

in Scotland into line with other utilities where the same rules would apply. There will still be a contribution, that's an important point. There will still be a contribution from Scottish Water to the developer which would be a sum calculated on the benefit that Scottish Water gets from that additional customer coming on to the network, right, so when someone gets connected there is a revenue stream that will come to Scottish Water as a consequence of that connection and that amount in present value terms would be paid to the developer. Now, that will not normally cover all of the costs that the developer has, particularly if it is in a rural area but it will cover a substantial portion of them.

The stakeholder stated that he thought that was a very important point and one which he thought was disappointing, the fact that this arrangement has been put in place it seemed to him would do nothing to encourage the promotion of development in rural and fragile areas where investment costs generally are higher. Smaller numbers of properties, probably higher development costs but Scottish Water's contribution linked to income generated is going to be quite small in comparison to big urban developments where for a relatively small area you'll get a lot of income.

The Commissioner confirmed that, except that the rural development was already going to benefit over the medium to longer term by a lower charge than would otherwise have applied because of the harmonisation of charges across Scotland. So, that argument was, in a sense, a cake and eat it argument that we want to have both the benefit of lower charges through harmonisation in a rural area, but we also want an additional subsidy to meet the costs of the development. This will not necessarily place a burden on rural developments and will not necessarily cost more than the connections, as it will depend on individual circumstances. You cannot generalise about this. Connecting ten houses in certain areas will be relatively straightforward and relatively cheaper for the developer to do. Connecting two houses in an urban area where, let's say, the water pressure problems or sewer flooding problems might be very, very expensive to do. So, you cannot generalise about this. It will be very, very specific but what you can say is that there may be instances where the cost in some rural

areas where there is already a capacity issue might still be quite expensive for the developer to put in but you can't generalise about it.

A stakeholder asked that on the question of the borrowing costs, would that be re-charged back or taken into account in the contribution?

The Commissioner confirmed that it would and referred the meeting to point 55 of the Guidance where we started to talk a little bit about this. There was a slightly surprising strength of feeling that non-household customers wanted to be metered. It seems that quite a lot of this is down to probably scepticism about the rateable value system and its fairness and people felt that if I'm metered at least it's transparent and I know where I stand versus people with whom I may be competing locally or whatever whereas with rateable value I'm never quite sure where I stand. The Executive has taken a step of, basically, saying that meters, the long-term aim will be to move to meters. The talk is to get this change implemented by 2010 and we don't think it's probably possible, to have all businesses metered by 2010. What is probably possible is to have a plan in place and to have begun the process of the transition of businesses towards metered customers. It is not impossible that in many cases where you're dealing with smaller premises that you could introduce some sort of virtual metering or something as a bridge between the rateable value link ending in 2010 and the actual installation of the meter after 2010, but that is the sort of thing that's going to need thinking about, but it's probably important to note that it would be really rather difficult to get meters into every non-domestic premises by 2010, so we don't think that is going to happen.

A stakeholder stated that his point about an incentive, he meant removal of the disincentive to do it for small businesses is the cost of installation for a benefit that they may or may not get. But if that can be reduced the cost of the installation, then he thought a lot of businesses would go for it, but it's a fear that, gosh, it's going to cost me all that much and will the saving be all that. But my advice to our members is if at all possible go for a meter but we don't advise that for restaurants and cafes and pubs. If they're lucky enough still to be on

rateable value, stay on it. (Inaudible) kept going on about the shop and the kettle and the toilets and the wash hand basin, you know, and that is the one who is paying over the odds but again it is a fear of the cost.

Another stakeholder asked the Commissioner if there was going to be a remit put if metering does go ahead and what type of metering, ie emphasis on more smart metering to allow companies to do more on water management?

The Commissioner explained that in a sense the Guidance is probably silent on that for good reason. The reason for that although we do not know this for certain, is that the Water Services Bill has now passed through Parliament and that envisions a licensing regime for retailers to be opened up by 2008, with Scottish Water Retail being the sole licensed retailer between 2006 and 2008. The way that that separation of the retail function is being engineered is such that there will be an incentive for retailers to offer value added services of that type to non-domestic customers and that would equally apply to Scottish Water Retail as it would to any other retailer. But the broad aim of the separation proposals is that there will be a more tailored and better level of service being offered to the non-domestic customer rather than a one size fits all type service which until relatively recently was pretty much what was on offer.

A stakeholder asked to go back to the time length. And asked how much wriggle room there's going to be left between when draft comes out in summer and the final draft because lots of things have been nailed down now. The stakeholder went on to state that rises can't be above inflation, there's going to be this large number of price caps, this is going to happen and that's going to happen And asked if the Commissioner could you give a feel for how much purchase bodies like Water Watch Scotland and others will have in that time or is it, in effect, just about all going to be nailed down and, with a little playing about at the edges but not much is going to be up for grabs.

The Commissioner stated that it was a question of definition, as to what the stakeholder meant by around

the edges and not much up for grabs. Scottish Water is effectively, as you all know, an asset business, a very, very large asset business and it is one that once you take the decisions on what you are going to invest in have been taken and once you allow for the costs of operating those assets, you don't really have very much left that is very discretionary. What you have left that has degrees of discretion around it is who pays what of the bill. I'm sure Scottish Water will seek to make representations about the levels of efficiency that it is asked to achieve, it would be surprising if they didn't. There may well be representations that customers will wish to make that the efficiency targets should maybe be increased and the gap with England and Wales should be narrowed more quickly. The question is, on the cost side of things, have we got it broadly in the middle of where Scottish Water would like it and where the customers would like it? If we're broadly in the middle then it probably doesn't change very much. If we've over-egged it one way or the other then it may change.

The same stakeholder continued... "I'm just trying to nail down what discretion there could possibly be if the investment programme is basically set out now if the price caps are basically set out now and if the principles of charging are basically set out now? I've struggled to see how the draft will differ from the final version from the consumer's point of view and where the consumer can, if you like, lobby or make a change in that one."

The Commissioner confirmed that in England and Wales where the whole process is more mature than our process in Scotland, customers ended up getting a worse deal to the extent of £16 a year between draft and final. So, £16 a year to anyone in Income Support we would suggest is quite a lot of money. So, just because the answer doesn't look too bad in June does not mean that the customer should not be making sure that they defend their position and the way that they will defend their position is by making representations on that draft. Now, will it ultimately change very much? It will be a function of whether we have pitched it at a reasonable point between what it is reasonable for customers to expect and what it is reasonable for Scottish Water to have delivered. If we've got that bit right then, yes, it won't move terribly much. If we haven't and we might not, but if we do, then,

you know, clearly it will be a response to the representations that will influence the final draft, you know, what the final version says.

A stakeholder asked about the maturity of process and if the Commissioner was confident that Scottish Water and the local authorities are knowledgeable enough about the vision of costs when it comes to surface water road drainage.

The Commissioner replied, "Yes is the simple answer to that and we don't know how much that costs."

A stakeholder stated that this therefore had a material bearing on who's paying for what.

The Commissioner explained that it had a material bearing if we do not just accept that, and, at this point there was no reason to change where we currently were. There was little point in changing the costs that have been allocated to a particular activity unless we're sure that we are moving at least directionally in the right direction and it could well be that we are not and you will get different views on this in different places because in certain local authority areas the sewerage system will be at or near its capacity and, therefore, they'll be having flooding of the roads more often and, therefore, they want to see more investment in that and, therefore, the cost would be going up and you will see other areas where it's less of a problem. So, you'll get different perceptions from different people. That's fine, that's normal.

Hopefully over time our analytical work will bring greater clarity to that area. It's taken five or six years to get to the level of confidence we now have in information. Three or four years ago none of this information got collected, I don't know why it didn't get collected but it didn't. The industry has come a long way in the last three or four years and, you know, it's important to recognise what it has achieved in the last three or four years.

A stakeholder asked if an allowance had been made for climate change, increased rainfall?

The Commissioner confirmed that is a specific question that the stakeholder would have to ask Scottish Water

and the Quality Regulators. We would assume that when SEPA is fixing consents that they will be taking expected rainfall patterns into account because that affects both the flows of rivers and the flows through sewage treatment work. So, we would assume that they are taking that into consideration in setting consent and we would be slightly disturbed if Scottish Water were not taking it into account given that their works have to comply with those consents and their works, the flow into the works is going to be a function of any climate change that is happening. So, yes, economically we will look at what investment is declared to be required and whether that investment is efficient or not. We do not propose to second guess the quality regulators in what they are asking for.

A stakeholder asked if they could ask a question about the capital programme. For example, about water companies rubbing their hands with glee because customers had suffered but the general standard, perhaps the Environment Agency is thinking well, we didn't get as good a deal as we wanted out of this. So, there is obviously this tension between what has to be done, and what we can afford to pay for and the same goes in Scotland. I'm really looking at item 25 which actually says you decide on the maximum size of the capital expenditure programme and I'm not sure exactly what that means because so much has to be done to meet European regulations and customer requirements, etc. And I am not sure how this fits in because, the Ministers' objectives say what has to be done with capital and then it says here that you actually decide what physically Scottish Water is going to do.

The Commissioner explained that it was something of a misrepresentation, of what's in the Guidance. What it is saying is that we should assess what the maximum size of capital programme that can be efficiently delivered is. That's rather different from saying that we decide what the capital programme is. The Ministers have decided that there is an amount which come what may will get funded. Whether it's efficient or not is a complete irrelevance, okay? Now just to be absolutely clear on this, there is an amount of essential investment that is going to get delivered and that's it, right? Now, beyond that they've got a wish list, quite a long wish list, right,

and to the extent that we can fit those things in and not impact adversely on efficiency and not threaten stable prices, they should be being added in. Now, the Guidance is really quite fair on that. It is not a question of me or the Commission deciding what the level of investment is, the Ministers have decided that. What we are doing is getting as far down the list of things that Ministers have considered desirable and by definition by calling them desirable have said that they are optional, as possible. We also put in place a mechanism where if Scottish Water outperforms capped efficiency targets then the extent of that outperformance is rolled into further capital projects rather than anything else. So, unlike the system in England and Wales where the shareholder would cream off any additional outperformance in capital, in the regulatory mechanism we put in place here effectively there is an incentive to find efficient ways of doing things because if they do save money on the capital programme then most things that they consider important are able to get financed.

A stakeholder stated that it the Commissioner could put that another way and say that by building in a desirable element to the capital programme which does not have to be delivered then that is where you flex things if given that charges are pretty well fixed, borrowing's pretty well fixed, if capital efficiency is not delivered something has to give. So, that's where you will accommodate that.

The Commissioner confirmed that the capital efficiency once its set would have to be delivered. It will not be an option. Once the regulatory contract is struck between customers and company, and again there are three bites at this. Scottish Water gets its business plan so pre first draft determination, right, it has got its business plans to influence the process. If it gets an answer it doesn't like it can make representation. If it still doesn't like the answer after final determination it has two options. It could officially review, either me or the Commission, or it could go to the Competition Commission and say, this is unfair, right? Now, that is there for Scottish Water to do. If they want to go down that route, that's fine. Now, equally Water Watch Scotland under the Enterprise Act can lodge a complaint and take it to the Competition Commission as well if they don't like it.

This is not on the business plan, but under the

Enterprise Act they have a statutory right to do it were they so to choose. There are a whole series of safeguards and processes in place that should ensure that the answer is right at the end of the day. Now, if the regulator has got it right you would want to see some reluctance on the part of shareholders to be accepting the regulatory settlement very quickly. That is why I was suggesting that in England and Wales with the £16 change between draft and final determinations and companies signing up within two or three days of the final determination, that it just may be that the regulator was quite generous.

A stakeholder asked the Commissioner what efficiency figure did he have in mind when he wrote to the Scottish Executive in December and gave his broad view of how charges might trend.

The Commissioner explained that we used a whole range of targets from operating expenditure going down to close to the same level as in England and Wales by 2010 to situations where operating expenditure was actually climbing and the efficiency position of Scottish Water, relatively speaking, was getting worse. So, the whole point of doing an analytical exercise of this type using statistical distributions is to avoid making decisions. We're not in the ball game of making decisions until we've collected all the evidence. What we're using are very, very wide ranges which when combined allow us to make reasonable statistically driven forecasts of likely outcomes. So, it's effectively the same as someone decides whether it's worth insuring you to live till you're 70 or not. It is effectively a quasi-actuarial type exercise.

A stakeholder asked, "on the subject of capital expenditure, you said you would refer back to PFI?" to which the Commissioner replied, "Yes, we've got the second document."

A stakeholder asked the Commissioner to talk about trade effluent charges and the Commissioner obliged as follows: "Trade effluent charges will have their own basket and they will be regulated for the first time and they will be set for the first time by including a charges scheme for Scottish Water for the first time. So, there will be a degree of disparity in trade effluent charging

which has not previously been there.

It will be up to Scottish Water to decide what mechanism it wants to use. What we will ensure is that the various elements that can be used in the calculation of trade effluent charges have reasonable weightings within that and that there is good reason for differences in the tariff associated with different components of the formula.

A stakeholder referred the Commissioner to his referral of what was a horrifying leakage level of 43% and asked if that area was specific to any degree?

The Commissioner confirmed that it was across Scotland and that it would be better than that in some areas and an awful lot worse than that in others. I think we have begun to talk about some of the issues relating to the investment programme already. I think the most important point about the investment Guidance is the fact that what Ministers have required is this, the essential list of things that, come what may, get funded and then the desirable list. So, we can address those on page 2 of the detail there is a table, Table 1 which identifies the area of investment and the over-arching objective of the Executive. It is important to give some credit to the Executive here in terms of this Guidance. It was pointed out to me by one fairly eminent, in fact very eminent, city analyst that when it came to DEFRA's3 guidance to the water industry in England and Wales, the only numbers in the Guidance are the page numbers. So, it is really quite useful, in fact, very useful that the Executive has tied down exactly what it is it wants in a way that DEFRA did not.

There is one point to draw your attention to in Table 1. We're talking about removing 1,140 properties from the at risk register on sewer flooding. General flooding and impact of that on all types of infrastructure, assets, is a separate issue and is not within the ambit of Scottish Water. It is partly national and partly a local issue that needs addressing and there are a number of areas with climate change in particular that are going to require investment separately to address them.

A stakeholder asked: "On costs on the essential ones,

³ Department for Environment, Food and Rural Affairs.

what is your current estimate on the capital investment costs to meet the essential ones? Is that the £4 billion one that the Minister was talking about or is that less than that?"

The Commissioner explained that the £4 billion would be properly in line with what was in Scottish Water's first draft business plan to meet the essentials. My understanding is from the Reporter who is working with Scottish Water on the costings at the moment, that that number would now be less than £4 billion to do that, in Scottish Water's view.

One of the difficulties with measuring and monitoring the outputs of investment are the difference between when you are doing added investment to improve compliance or improve public health or to relieve development constraint or to move a property from the at risk register of sewer flooding, the intervention with assets will typically do other things as well as solve that problem. So, when we talk about capital maintenance being such that if we invest that amount of capital maintenance things should stay the same, all right? That means that if we had done no other investment in the period, things should stay the same all right? So, it is a misrepresentation that I've seen written recently in the Press that says that Quality and Standards II left things in Scotland in 2006 the same as they were in 2002, all right? What Quality and Standards did was fund, put enough money into capital maintenance to ensure that had there been no other investment going on in Quality and Standards II, we would have had the same level of service coming from our assets in 2006 as in 2002. However, we also know that there was something like 800 to £1 billion invested in improving the quality of the assets. So, things should be materially better in 2006 than they were in 2002. It is an important distinction to make as to terminologies here and that is the point that is made in point 12 and then on the next page where you get the serviceability indicators. There is a very important asterisk below the table I'll take you to which says "These serviceability indicators will show an improvement over the period 2006-2014, derived from drinking water quality, environment, growth or customer enhancement programmes."

A stakeholder asked the Commissioner to explain what

water bodies were, to which he replied "Rivers to you and me. Rivers, estuaries, burns, it may well include lochs as well."

A stakeholder asked the Commissioner about the figures, for example, 5,625 properties seemed quite specific to him and the Commissioner agreed that it did to him too.

Another stakeholder asked if there were specific areas or locations in mind.

The Commissioner explained that SEPA have done an awful lot of work in identifying those areas where they believe that Scottish Water is a major polluter, where if that were addressed alongside the other sort of initiative SEPA have alongside (inaudible) pollution or whatever, then the benefits that are being projected to the water body would happen. Because SEPA is doing it very much at each specific discharge to a water body and is looking at it from the end of the pipe back up (inaudible) they can and do this to a degree of accuracy which I would agree is almost unnecessary. SEPA is basically saying in these areas this is what needs to be done because if we don't do it, either you will be in breach of legislation or if it were a desirable project there will be some SEPA's nice to haves. Everything that is in the essential programme is driven absolutely by statute, either European or more local.

The Scottish Water investment plan will be published in full and the various projects that comprise the plan linked back to these outputs will have been made clear and will also have published the Reporter independent engineering consultant's view on that plan.

A stakeholder asked: "As the programmes for water quality, environment and customer enhancement are fleshed out will there come a point when someone is able to set targets with regard to how much these serviceability indicators should rise or is it just going to wait and see what happens?

The Commissioner confirmed that it was the point of point 14 where it says, "Ministers expect Scottish Water to quantify enhancement in service standards derived

from other aspects of the programme and to establish in conjunction with the Water Industry Commission biannual targets of asset performance throughout the period on the basis of the above types of measure". It is a major challenge that, you know, work has begun with Scottish Water to improve understanding of the way in which assets interact with each other and with the environment and as that work progresses in terms of drain area studies and metered areas then more and more of this will be possible.

A stakeholder then asked the Commissioner with regards to interruptions to supply of water. It was the stakeholder's information some time ago when they had problems with a contractor digging through the water main and putting out of commission the two hotels and a restaurant and pubs serving food. This happened regularly, and they were told that as long as the contractor gave notice that he was digging in the vicinity he was not liable for any interruption to the supply, which seemed a ridiculous rule.

The Commissioner informed the stakeholder that he was not aware of that and the stakeholder continued to say that if the contractor was made responsible for the loss to other businesses in the area then he might then be a bit more careful where he plonks his JCB.

The Commissioner went on to say that he was also aware of circumstances where, largely probably because the industry has changed its structure on many occasions, that the knowledge where the pipes are is not quite where it could be and, therefore, he was not really blaming the contractor if he didn't know there's a pipe there.

The stakeholder confirmed that the contractor kept breaking the same pipe and on the fifth time he felt that it was a level too much.

The Commissioner replied that he didn't think that there was any point in going through the various legislative elements of this simply because, from our standpoint we take these as given from the quality regulators and we do not try and second guess these in any way. But it is again a strength of this Guidance the fact that it is as

clearly stated as it is in terms of various outputs that needed delivering and that this with a detailed investment programme is going to ensure that not only do customers get the value for money that they will expect but also, frankly, that Scottish Water does not get things added on to its desirable list, for example, things around security of supply that have been done over the last two or three years without there being clear extra funding available to cover those things, because that is what has historically happened. We start off with a list and then (inaudible because of coughing).

A stakeholder asked about point 20 and if we knew if that included the current row between SEPA and Scottish Power at Daldowie over the sludge disposal issues?

The Commissioner explained that as far as we are aware that is unresolved. One of the issues that has clearly been a big issue has been the development constraints. The Executive is making it clear, and that it's probably most clear in paragraph 34, that it intends to ensure that funding for Scottish Water will be sufficient to meet the relief of constraints at strategic level. So, if a developer is prepared to pay the cost to get connected then money will be available to ensure that a strategic bottleneck, if such there is, gets resolved. Now, they've put in an amount of money here which is based on housing trend data and business growth expectations and whatever and it reflects consultation with local authorities and most of the local authorities that it covered most of the things that they thought were not wholly aspirational, let's put it like that, but what the Executive has said is that there is more money going to be made available if such is required on these part 4 constraints. So, development constraints should no longer be an issue, because if the developers are prepared to pay their bit then that will happen. Now, the exceptions to this are affordable housing is covered separately. There will be separate grants made available to ensure that those developments can continue. So, all we are talking about here are purely profit driven private development and we think that is important.

Affordable housing is not affected by this because there's money available elsewhere being done for that.

A stakeholder asked: "What about the commercial

side?" That doesn't tie in with what is said on the charging policy paper where it says, "No grant".

The Commissioner replied: The grant is not being paid to Scottish Water, the grant is being paid to Scottish Homes Community Scotland.

Commercial development is covered and there are 4,050 hectares of new commercial land available for connection.

A stakeholder asked if the phrase 'strategic capacity', was defined somewhere? So that people know exactly what is in and what is out?

They also asked if 120,000 new homes, was that private and affordable housing to which the Commissioner replied, "yes" to all three points raised.

The stakeholder also asked if that would be sufficient and the Commissioner explained that it was quite a big increase but that if you look at the last ten years the property growth count net is about half of one per cent in terms of actual properties, a bit more than that, and probably about three-quarters of a per cent by Council Tax banding equivalents.

We agree that although we have a diminishing population we have more people living on their own and living longer. There is an argument being floated in the Press by developers that this is going to put up the price of new homes. Well, it will put up the price of new private homes if the developer tries to pass all of this cost on to the purchaser of the new home, but were they to do that, they would, I suppose, if supply and demand laws work, increase the value of everybody else's property in Scotland, which they weren't quite so keen to point out to you in the Press release. So, we will no doubt get a degree of bleating on this, but we don't know and we do not have terribly much sympathy for that argument.

A stakeholder made reference to the leakage rate and asked if it was higher than 42% and if any of the leakage has been taken into account in the fact that they need this increase in water treatment works?

The Commissioner explained that in certain areas it has begun to be taken into account. For example, the sizing of the Milngavie plant made certain assumptions about reducing the (inaudible) Glasgow area. It did not make some of the assumptions it could have made at the time and had it done so then maybe a slightly different solution would have been taken, but to be honest, the decisions on Milngavie were being taken in 1999, 2000, something like that, and the level of information in the industry at that time was a lot poorer than it is today. So, we're going to see investment projects getting better and better in terms of the definition as we go forward and inevitably that's going to mean value for money. There's always going to be a lack between the ability to reduce operating costs, which are easier and more immediate in their controllability for management than their ability to reduce and control the efficiency of capital. Capital is much more difficult to make efficient than operating costs.

We think one of the things that we would expect to see Scottish Water do is to make real progress in moving towards a more economic level of leakage from where it currently is. Much of that can be done in ways that would actually save money in operating costs because much of it would be reducing pressure at some points in the system and because the water mains are less pressurised they leak and burst less often and, therefore, not only using less electricity to get this water up to high pressure but you have also got less squads of people going out to fix things. So, reducing leakage does not necessarily increase costs and, in fact, in England and Wales none of the companies have specifically had money to reduce leakage. They have done that as part of the ongoing operational improvement in the industry. There has been a bit of money that the industry has had to deal with supply and demand issues but most of that has gone into metering costs for households (inaudible).

We are aware that Ofwat set targets for leakage in England but none have been set by the Executive just yet.

A stakeholder referred the Commissioner to what he had said if a developer passes on extra cost to the

person buying the house and the fact that he had difficulty understanding whom else the developer was going to get that money from.

The Commissioner confirmed that it was the developer and that this would have to come from within his profit margin. The stakeholder felt that this may have implications to an area where the people in local jobs find it very difficult to compete with the migrating population for houses, and that this would only make it more difficult.

The Commissioner explained that possibly this was an issue that affordable housing ought to be solving rather than the private market. We are not saying it's not an issue that is there and real but you are only going to pay more for a house if the house is more valuable to you. You're not going to pay more for the sake of it and expect to get less. You are not going to buy a car that as soon as you drive it out the showroom it's worth three grand less or whatever it is. We're talking about a long-term asset. I think, on leakage targets we've got to give Scottish Water something to comment on in the draft determination anyway. So, they seem to be thinking they are not going to get something to comment on so we'll give them something specific.

Odour. We think that odour is an important, a very important issue from a customer's standpoint as anyone who has gone to any customer meetings will tell you. Odour is a big issue. In Scottish Water's draft business plan, there is a very substantial amount of money being highlighted for investment at PFI sites. We find this disturbing. We find it disturbing because if these PFI contracts do what they say on the tin then risk was offset from the public sector to the private sector and as a consequence if there is an odour problem with a PFI sewage works then what does a PFI contract for sewage do if it doesn't deal with the normal operation of sewage works and the normal operation would seem to us to cover making sure that it doesn't whiff too much in the opinion of the local population. Therefore, before I would be minded in any way to fund investment in a PFI site I would need a very clear definition that this was something that genuinely was not covered in the contract because otherwise it would fall under my definition of us paying twice for the same thing. So, we

previously floated the idea that the PFI contracts ought to be subject to a degree of efficiency and economic analysis of them would suggest that given where Scottish Water now is that they could do with getting a bit more efficient but there has been a view that suggests that that's not the way forward, but that does not mean that more money should follow the money that's already gone into them to deal with things like odour. So, we have asked Scottish Water for copies of the contracts for each of the PFIs and we will require a legal review of those before we would be inclined to pay any more or allow any more customer money to go in that direction.

A stakeholder then asked about the siting of them, because the one, coming on the A96 (inaudible due to coughing) on a hot day. So, when you're coming into Inverness is it that there is a malodour problem or is it that it has been sited badly, far too near the main road?

The Commissioner confirmed that the PFI contractor is, in our view until we see legal documents saying something different, the PFI contractor is contracted to deliver a satisfactory sewerage service and part of that satisfactory sewerage service would seem to be to solve odour problems as and when they arise. How can you operate a sewage works and not worry about odour? It seems a completely ridiculous conception. If we've completely cocked up the contracts then there might be a different issue and maybe we're going to have to say, that we got this wrong and customers are going to have to pay twice, but then something else has to be done and there might be other political decisions to be taken.

I'm sure that by siting it in the right place there would only be a certain amount of odour but someone that has taken on operating a particular aspect, they've got to operate it to an acceptable standard and deliver a level of service that is equal to the expectations of the community. Certainly most of the legal comment we have seen on odour is that nothing, even when the statutory code comes in place all it's going to do is effectively codify what has been the case, you know, for the last 20 or 30 years in terms of expectations on odour performance. It is not actually changing anything.

A stakeholder asked the Commissioner: "I suspect you will find some difficulties with the contracts I have seen certainly in terms of some legal enforcement but I think your approach is absolutely right. You mentioned about — I notice in one of your earlier documents you refer to the possibility of increasing the efficiency rate and in some cases taking the operation in-house. In terms of increasing efficiency ratings, if the contract has been set for, in some cases, 30 years or more and the contract is fixed wouldn't there be a penalty, presumably, if the PFI companies have a nice little cash earner out of these deals, surely they are not going to give those up without a price to be paid?"

The Commissioner explained that they might but with a public sector cost to capital being significant (inaudible) a private sector cost to capital, they might actually be better to cut the losses now in certain circumstances. So, until we see what is in these contracts, because if we really offset risk and can enforce it in some way, and the different ways of enforcing is the legal way and there is just holding the operator to account to the letter of the level of service and all the rest of it, then we will see what happens but we don't think anything should be ruled out just because there are contracts in place and just because there have been for 25 years. If it is economically beneficial for customers to do something different then surely we should be doing something different?

The stakeholder responded by saying: "I agree but in terms of the risk and that is where the odour comes into it, but in terms of the operating efficiency, you know, prices being fixed, etc over that period, then how do you get out of that? I mean, certainly when it happens Inverness Airport is a good example and Skye Bridge would be another one.

The Commissioner confirmed that there are rules issued by the Treasury on PFI, particularly regarding the cost of finance. With interest rates having come down really rather considerably since the PFI contracts were originally financed, we are not aware of any of those having been refinanced, the debt portions, and we are also aware that the equity returns are increasing because they are where they are in terms of the returns. Now, it is, according to the Treasury Guidance, a

requirement on Scottish Water/the Executive to ensure that those costs are, where they are debt funded, efficiently funded and that any benefits are at least shared with the public sector. That was after there has been a PFI in the water industry since 1998. The Guidance came in after 1998 and is backward looking as well as forward looking.

A stakeholder asked how do you enforce the Guidance when you start the contract off? To which the Commissioner replied: "Maybe we make it clear that there could be some reputational issues for the contractor if they are not prepared to fund it on an efficient basis and pass some benefit back to us. I think all we are saying here is that the PFI contractors are taking about 12% out of every one of our bills in Scotland and given that they are taking 12% they ought to be subject to the same degree of scrutiny as all the rest of it, that is all we are saying. No political point here, I am just a simple economist in that sense.

The stakeholder continued to say "that in our experience anyway in Argyll & Bute, we had some bad experiences, as you know, with some of the waste water treatment plants that were built and what we have now is a total lack of trust in any application that Scottish Water makes which is obviously making it much more difficult to deliver Q & S to and it is an ongoing thing, just that nobody trusts Scottish Water in any of their applications at all."

The Commissioner responded by saying: "Clearly, particularly in your part of the world there have been some real problems. The northeast has had similar problems And it seems to be patchy. Clearly, it is going to be important that that trust gets re-established, it has to get re-established, there is no other way of doing it. But it is important that part of the answer is more open, more swift consultation involving senior management with local communities because too often a lot of these schemes are explained to local communities by officials within Scottish Water who are not really empowered to take real decisions and as a consequence some of the feedback that probably goes back into the Scottish Water organisation is not as not acted upon quite as well as it should be, but it is picked up and, you know, in the Argyll

& Bute area it is particularly a function of two or three really bad decisions, in the 1998 to 2001 time period.

An important point is in 53, just so that the rural communities do not think that they are getting not such a good deal. Unplanned interruptions are getting to be more a problem in rural areas where there area less ways of maintaining the level of service because they have got less of a matrix or network of pipes in order to redirect things. So, there is a specific initiative included in the desirable list to address unplanned interruption, which we think is good.

A stakeholder gave an account about a pipe being broken in Kinloch and Findhorn and that there was only one supply pipeline and the stakeholder was of the opinion that in a situation like that it is highly inconvenient for houses but even more inconvenient for restaurants and pubs and hotels because they have to, basically, close down for the day and they have to maintain health standards, etc. It can be quite serious and there are lots of places in rural Scotland where there is only one supply line and if that is broken for whatever reason it can be extremely serious.

The Commissioner responded to this as follows: "An awful lot of this is about ensuring that the information that Scottish Water is maintaining is as good as it can be and that, you know, we avoid the unfortunate accidents where someone has thought the water main was that side of the pavement rather than this side. So, it is important to have that dealt with. There are always going to be accidents, unfortunately, and there will always be interruptions of one sort of another and the best you can really hope for is that there is as good a response as possible and it gets fixed.

A stakeholder informed the meeting that Scottish Water are pretty good at coming down if there is a break in supply and they will be there fast even if it occurs on a public holiday.

The Commissioner noted this and intimated to the meeting that the last point worth drawing to the meeting's attention in the investment Guidance is that the Ministers have required that a group be established to monitor

delivery of the investment projects. If this is going to ensure that we do not get ourselves into the position we're in today where substantial portions of Quality and Standards II are still remaining to be delivered partly probably because of setting up Scottish Water Solutions, partly because of the trust issue with some of the planning permissions that are being required, partly even just the size of the programme, but it is important that we know where we stand with investment at a much earlier period in the regulatory process and indeed that Scottish Water makes sure that it understands where it is with investment at a much earlier period in the investment process. So, if the group is going to introduce that degree of extra discipline that is a good thing.

I am conscious we have skipped through that fairly quickly but most of it is, are things that are not really in my ambit to comment on because they are rightly the decisions of other experts.

A stakeholder asked if there was to be an annual report to be produced for the public to digest if they so wish on the progress of the capital plan?

The Commissioner confirmed that we would continue to publish annual performance reports on cost performance, levels of service, investment and asset management. They will be as objective as we can make them and we very much want Scottish Water to be successful. There are comments in the Press earlier this week that highlighted some of the challenges that the industry faces in the public sector, although they are not all completely within its control but the one way Scottish Water can ensure that it has and maintains public support is to deliver good levels of service efficiently and have bills that people think are affordable. If it does that, then it faces a secure future. If it doesn't do that, someone might do something differently and that would be unfortunate.

Another stakeholder asked the Commissioner: "In terms of the delivery of Quality and Standards II, Scottish Water has had to slim down its organisation. Do you expect under this new period further slimming down of that organisation as part of the efficiency savings or are we now reaching a point whereby we consider that relatively efficient and that any further slimming down

might, in fact, have an adverse effect on the delivery of Quality and Standards II?"

The Commissioner explained that there is still a fairly significant operating cost efficiency gap between Scottish Water and companies south of the border and there are always cases to be made and discussed on differences that exist between Scotland and south of the border but there are few areas in Scotland which are hugely and materially different to some areas of England and Wales. We have been struck in taking the west coast mainline through the Lake District as to how few houses I see on occasion and it is not that different to bits of Scotland. So we can look at it and we will continue to try to make an objective assessment of efficiency. Now, how management decide that they are going to delivery those efficiencies, that is an entirely different ball game. It is entirely up to management as to how they decide how they are going to deliver it.

Now, they may decide that a head count reduction is one thing they are looking at. There are other ways of doing it as different companies have done different things. You will find companies in England and Wales that of the total amount they spend on operating costs only about 30% is labour. You will find other companies in England and Wales where of the total amount of running costs they spend, labour costs are over 40% and you can't generalise as to the type of area that those cover. So, you might find a rural one that is at one end of the spectrum and a rural one that is another end of the spectrum well as you might find an urban area at one end and an urban area at the other end. So, it is also a little bit disingenuous, to be quite honest, to suggest that head count reductions have impacted on the delivery of Quality and Standards II and that is simply because Quality and Standards II has been entrusted to a joint venture company, Scottish Water Solutions. Something of the order of 500 people from Scottish Water got seconded into that joint venture and that joint venture is supposed to have an incentive to deliver the projects on time and to budget and so quite how head count reductions within head office or wherever are impacting on that capital programme is a little bit beyond me. So, we do not believe that that is an excuse that should be being used. We don't think that is a reason why Quality

and Standards II should not have been delivered. Efficiency is only efficiency if it costs less to deliver the same thing. It is not an efficiency just to remove a head unless you found another way of making sure that what that head was doing is being covered.

Stakeholder workshop March 2005: Transcript of the day

On Friday 17 March 2005 a stakeholder workshop was held at the WICS offices in Stirling.

The Commissioner and the Director of Costs and Performance from WICS were in attendance, along with stakeholders from Aberdeenshire Council, Angus Council, Robert Gordon University, Scottish Water and Water UK.

A note of the meeting, taken by an independent company, is reproduced below

The Commissioner chaired and opened the meeting by taking stakeholders through some of the timings.

He informed them of the following: On 30 June a draft decision on charges will be published that will be a little different to the ministerial decision on revenue after 2001. It will be different in a couple of ways. One is it is this Office that has taken the decision in draft. The second way that it will be different is that the decision will essentially be a series of price caps rather than a level of revenue cap. So, we will specifically set 11 price caps, which will cover things like domestic water charges on Council Tax and domestic waste water charges on Council Tax. There will then be a cap for small business and metered households who are metered for water and waste water. There will be caps on unmeasured water and waste water customers. There will be separate caps for medium and larger water and waste water users, trade effluent and for core secondary services for things like septic tank emptying. There will also be a separate cap for surface drainage charges.

Obviously there are different tariffs, individual tariffs that fit within those baskets. So, for a small business water user, there is a fixed charge, there is a volumetric charge and there may be different types of volumetric charges that want to be proposed by Scottish Water within that. There might be, for example, a very low user charge or whatever, and as long as it stays within that tariff basket then Scottish Water effectively is free to do that, as long as it is consistent with ministerial guidance obviously.

What that should ensure is that there is very much more certainty as to what is actually going to happen to charges faced by individual groups of customers, and that certainty is there largely because there will be projections which would not get changed unless there were an interim determination within four years of the levels of volume and the size of the customer base.

So, revenue is obviously a function of customer base and tariff levels. So, there would be an assumption put in on, let us say, Band D equivalent growth in the housing stock, and that gets built in and clearly that growth reduces the tariff level relatively for households and others.

Post-30 June there is then a three-month period in which customers, other interested parties, Scottish Water and the Scottish Executive can make their representations about what is in that answer.

In July my role is to be replaced by a Commission, and it will be the role of the Commission to accept those representations over that three-month period, re-work, re-write, start again. Whatever the Commission decides the work is to be done, it will produce a final version on the 30 November of this year.

After 30 November of this year there would be a process by which the individual tariffs get fixed within the caps set on the baskets, which should take about a month to six weeks. So, there will be an announcement by Scottish Water of its tariff levels probably some time in mid-January 2006, that would come into force in April 2006. But from a business standpoint or a household budget standpoint and the Council standpoint of knowing what the task is it is probably a reasonable assumption to work off what is in the draft because the regulatory determination is not going to change too much between draft and finals. It may change a bit with Commissioner representation but it should be within that ballpark.

That process happens, and tariffs will get fixed in line with that final determination, whatever happens. Scottish Water do have a right to be able to appeal the final determination if they really don't like it to the Competition Commission, but the first year's tariffs are as fixed in the final, whatever happens. So that the Competition

Commission only looks at the whole determination that was made over the four years, but any changes which can be positive or negative and there are instances where the Competition Commission has tightened regulatory settlements as well as loosened them up, and in fact there are probably more instances of them having tightened them than having loosened them. Scottish Water can then appeal to the Competition Commission and seek a different, better deal from their perspective and from the customer perspective, if one assumes, a worse deal if it is better for them. I suppose it could be marginally worse for Ministers in terms of borrowing or something, but ultimately it is going to impact on charges on household and business customers, were they to appeal and were they to be successful.

We up to this point have published the methodology. We will publish at some point this month the response to the methodology consultation. It is written and it is just going through its editing. We will get a second draft business plan from Scottish Water and an investment programme on 20 April; that is Scottish Water's last chance to influence events before publication of the draft determination. They have already submitted one first draft business plan at the end of October and a series of representations about why they think it is more expensive to operate in Scotland than anywhere else in the UK.

We have reviewed what they have said in that first draft business plan, looked at the levels of investment. In the first draft business plan, Scottish Water have suggested that they would need an increase in revenues of 5% in real terms. Having gone through it in some detail we have concluded that what was in that first draft business plan could be delivered without a real increase in prices from customers.

That is I think what Ministers were referring to when they issued their guidance to us and to Scottish Water and said that they wanted stable prices. So, effectively I suppose what they were saying was much of what was in Scottish Water's draft business plan in investment terms and their service terms were acceptable, but what they would not want to see if it is at all possible is a real increase in prices. We do not think any of us wants to see a real increase in prices as customers.

So, the guidance that Scottish Water has to include in their second draft business plan was published on 10 February. It set the various environmental requirements, and it also set various principles of charging. We suspect the most important one from a customer standpoint is that Ministers have made it clear that in this determinatory, regulatory environment, the Commission's decision is a decision and it will commit the level of revenue and prices but also commit the level of borrowing that the Scottish Executive is prepared to make available. In other words, they would step in and provide more money if Scottish Water fails to reach an acceptable level of performance as determined by the regulatory contract. That is in the customer interest because it ensures that Scottish Water has to live within the finite financial resources, which is what everyone in the real world has to do, in the commercial world. So, that can only bring benefits.

The other single difference and the first time that this has happened anywhere in the water industry and in the world as far as we are aware is that there will be price caps published both for retail prices and wholesale prices. Wholesale prices will be somewhat lower than the retail prices. They will reflect those activities which are genuinely wholesale and are not end customer facing. In other words, the definition of retail activities is not just customer service billing. It is all those activities which are essentially end customer facing.

There will be a substantial difference between the retail level of tariff and the wholesale level of tariff. We have previously said that that would be of the order of 15%. We have not finalised our work on this, but we are not yet aware of any new information which would lead us, if a Parliamentary Committee were to ask us again today, then the answer would be that we wouldn't be saying anything different to them than we said to them last autumn because we are not aware of any change to that. So, it might go up a bit. It might go down a bit. We do not know, but we think 15% is and still remains a reasonable estimate of what the difference is going to be.

The wholesale price will be available to those people who become licensed retailers or service providers of water and waste water services. That market will open

in April 2008, but from April 2006 what is now Scottish Water will be divided into what will remain Scottish Water and will essentially be the wholesale business, and a retail subsidiary that Scottish Water will have to set up which will become the retail business and will operate at arm's length for two years with a temporary licence, we expect, for that two-year period before becoming subject to new entrants competition. The new entrants could be conceivably any number of different types of beast. They could be smaller start-up companies that want to provide services to large industrial customers. They could be other utilities that already have billing and collection and customer service systems. It could be other water utilities from south of the border. It could indeed be trade associations or maybe even a large customer on its own right that wants to licence itself as a supplier, supplies itself and local businesses round about it. So, there are a number of ways in which we could see that this might develop.

A stakeholder from Scottish Water asked if there was a limit to a big user like Grangemouth – and could they elect to be their own supplier but supply no one else?

The Commissioner confirmed that, if BP wanted to be a retailer, licensed retailer to itself, we cannot imagine why it might not be allowed to do that. In fact, big chemical and industrials quite often have purchasing subsidies, within their holding company. So, that would be entirely reasonable that that is what happens, and that purchasing company becomes a licensed retailer of water, buys wholesale and bills the other group companies for activities.

So, there are a number of ways in which this could develop and the one thing that is certain, if one reviews the development competition in other markets, is that this degree of scrutiny that will inevitably come from retailers of the wholesale level of cost will tend to reduce the wholesale level of costs faster than would regulation on its own.

A stakeholder from Aberdeenshire Council asked for some examples and the Commissioner confirmed that electricity and gas would be substantial examples. In a sense that there was something like distribution costs post-separation of the supply distribution businesses, which fell by something approaching 20% in three years. So, there are...if you look at the gas industry, Transco spends less today than it did in 1992.

It costs less to operate Transco today than it did in 1992. That has probably got something to do with the fact that they do not retail at all. Transco is just...all Transco does is manage the pipe system. It doesn't even manage all of those any more or shortly won't, because it has sold off three of the local distribution centers.

One of the areas where the Water Services Act (Scotland) is silent is what would happen if there were competition and challenge of what essentially are a series of local monopolies, which is the local monopoly for treating sewage and the local monopoly for treating water, and it would be interesting as to what would happen. In other words, what would happen if...well, let us take an example that is maybe a very theoretical possibility. We do not know whether they are legally barred from doing that and we do not know whether a legal bar contract would stand Competition Act challenge, but let us say that the Levenmouth PFI for treatment of waste water in Fife had surplus capacity. If they had surplus capacity it is possible that that operating consortium could seek to provide a service to local farmers who were connected to Scottish Water sewers in a different part of the country, but it could empty slurry and effluent tanks on to farms. That could be tankered into Levenmouth and treated at Levenmouth because it has got surplus capacity. Now, we would have thought that that is a plausible scenario as to what could happen but it is not clear what the rules of the game would be under the Water Services Act.

So, the Act is silent on potential options for competition at the pre-distribution or collection system side of things. In most cases it is not going to be a realistic possibility. It is much more likely on waste water treatment than it is on water quality, clean water treatment, simply because particularly with stronger types of waste the costs involved tend to be more significant. It is also much more likely that you would transport effluent around than you would transport clean water around.

A stakeholder from a large water user group asked the Commissioner what were the key criteria to get yourself registered as a licensed retailer?

The Commissioner intimated to the meeting that one of the things he had not talked about is on 23 or 28 April when we will publish a consultation, which will be on the principles that need to be taken account of in the licensed regime. This consultation will be principally about the first stage in the process which is the interim licence for Scottish Water, but any views that people have about the longer term structure of this regime would be something that we would be keen to hear about. That is the 23rd of April. It will be about a 100-page document with outlines of where we are at the moment in our thinking. The consultation period for that is three months.

That will be followed in about early November probably by publication of a draft licence for the retail subsidiary of Scottish Water, and that will be available for consultation or comment from stakeholders again for three months with a view to that licence being in place by April 2006.

That process then basically repeats itself within the two levels of consultation about the principles for opening up licences and consultation on the boilerplate licences if you like for new entrants to the market and we hope to be able to licence new entrants beginning in October/November 2007 and those licences...the market wouldn't actually be opened until April 2008.

All of these consultations and timescales have been set out in Volume 1 and the Scottish Water Retail Business Licence is on page 45.

A stakeholder from Angus Council asked about the domestic supply and whether there would be different levels of discount for water and sewerage as compared with Council Tax.

The Commissioner explained that what Ministers were looking to do was to remove the single person discount and use the proceeds of that to help customers who couldn't afford charges and also to remove the dual home discount for water.

The Convention of Scottish Local Authorities.

What they have decided to do is to remove the second home discount fully and all households who are on Council Tax benefit will get at 25% reduction in their water and sewerage bill. Obviously there could be quite significant computer changes and they are talking with COSLA⁴.

The same stakeholder stated that when all that is decided, because if one was to work back the way, and start billing in February 2006 for the following year and if consultation is not finished on 30th of November then there could be fairly significant changes to it.

The Commissioner confirmed that as far as we are aware Ministers have taken their decision and that is it. There will be this 25% discount for households on Council Tax benefit. We know that there is a Working Group of COSLA along with East Renfrewshire Council and a couple of other Councils but it is East Renfrewshire Council that we remember with COSLA that is looking at the logistical issues and we would assume that there must be system issues for you as a result of this.

So, that is an ongoing process and the sums add up as far as we can see in terms of the costs from a water charge-payer standpoint. The money that comes in from second homeowners is going to replace or would cover the costs of the discounts to the people on Council Tax benefit. This is a second home, pure second home as opposed to a long-term empty.

A stakeholder from Water UK intimated to the meeting that he seemed to remember seeing something in recent legislation that there was a maximum discount as well, that if you lived in the highest band house it doesn't mean you necessarily get 25% off that if you were in Band H.

The Commissioner explained that with the original affordability scheme so-called, that Sam Galbraith introduced, the cap to whatever the threshold was it started off at £150 –and was only available to people in Band F and below. People in Band G and H paid the full difference between F and G or F and H and then got this plus £150.

So, yes, if you were a low-income pensioner in a Band H full of woodworm house that you could not possibly sell, you are disadvantaged.

It was not an affordability scheme, whatever else it was.

The threshold has now been taken away so that the Bands G and H get the full benefit but we are not certain about that.

In a sense it doesn't affect the work that we do because the work that we do relies on information from the Councils, which talks about number of Band D equivalents. So, if the Executive is intervening and providing additional money to Councils or Scottish Water to cover this then this element of subsidy, then that is a political decision and at the end of the day that does not affect water charge payers.

We are not going to get involved in finance. We've got enough problems of worrying about Scottish Water monies.

The same stakeholder from Water UK asked about the non-domestic charges because this is a requirement where he saw it to actually reduce them, so that when you do your determination is there going to be an instant reduction for non-domestic charges?

The Commissioner confirmed that there would be a 44 million pound change in the balance between household and businesses, between 2006 and 2010.

Ministers have said that that should happen in the least painful way possible for all customers.

It will mean effectively the household is paying as a share of the pot 44 million pounds more than they used to pay.

Ministers have said that charges should be stable as long as the essential investment programme can be delivered in full.

The stakeholder from Aberdeenshire Council asked the Commissioner what his definition of the word "stable"

was to which the Commissioner replied, "My definition of the word "stable" is not going up in real terms based on the consumer price index which is 2%."

The same stakeholder confirmed with the Commissioner that he was basically saying that he liked the programme from Scottish Water. They said they wanted it or they needed a 5% increase in their revenues to do it in real terms above inflation, and someone has taken the view that they can actually do it at no increase above inflation.

The Commissioner confirmed that there was enough information in the business plan, which allowed us to come to that conclusion, that being in the broad sense going back to effectiveness and efficiency.

There is no question that Scottish Water since it inherited the three former authorities, which got merged, has improved its performance and improved it really quite dramatically in cost terms. In levels of cost terms Scottish Water are projecting at this point that they will have met the running costs reductions that they were challenged with making in the 2002-06 review.

So, in real terms that is a reduction of £145 million per year in running costs. If they hadn't done that, customers' bills would have been 14.5% higher going forward than they already are. So, credit where credit is due. That is a considerable performance.

On the capital side the evidence at this point is more mixed. There is some evidence that projects which are now being delivered by Scottish Water Solutions would appear to be being delivered significantly more cheaply than some similar types of project or apparently similar types of project that were being delivered either by the three authorities or by Scottish Water under its own steam. That could be because Scottish Water Solutions is much more efficient. It could be because Scottish Water Solutions has picked all the right projects and left all the dodgy ones for Scottish Water. There is a number of reasons why it could happen, but the raw data at the moment would suggest that Scottish Water Solutions might be doing quite a good job, but it is far too early in the delivery of what is effectively a £2 billion capital

programme between the 2004-06 period to know where that is going to come out at the end.

In total levels of investment, investment has accelerated very markedly in Scotland since 1997 in the water services industry, and in actual per connected property terms the amount of investment that will have been made between 1984 and 2006. So, going back over the last ten years to the days of Regional Councils – they will have been broadly the same as the average in England and Wales in actual amounts of investment. In Scotland now there will be some issues around the efficiency and effectiveness of the investment, but that comparison does not include the investment that came through PFI at the turn of the century.

Scottish Water had a £2.4 billion investment programme in their first draft business plan. If you look at the experience in England and Wales there are five regional water companies in England and Wales that are either the same size as Scottish Water or larger. The two that are about the same size in connected properties, which are Anglian Water and Yorkshire Water, have never delivered a capital programme as big as the one that Scottish Water has currently got. So, the largest they have ever delivered is about £1.8 billion over four years.

The stakeholder form Aberdeenshire Council stated that the figures sounded very impressive but one of the concerns certainly going a few years back was just a total lack of sufficient investment in infrastructure. So, to some extent we are playing catch-up. He then asked the Commissioner where was the difference between the need and what we are investing in to which the Commissioner explained that in England and Wales they are going to be investing over the next five years £3.4 billion per year in England and Wales across all of England and Wales. That equates to about £150 or £145 per connected property across all of England and Wales, rural, urban, the works.

If we were to invest at, let us say, £2 billion, to take a nice round number, and don't take anything out of it other than it is a nice round number...if we are to invest 2 billion pounds, that would be £950 over four years per household which would be £237.50 per connected

property in Scotland. So, it is £100 more investment per year going into Scotland than is going into England and Wales. That is a lot more investment and a lot of dodgy pipes get fixed for £100 per connected property we would suggest, or if they don't then somebody has got it seriously wrong somewhere.

The stakeholder from the large water user group said: "But judging on how many roads are up in Edinburgh I'm not surprised." To which the Commissioner replied as follows: "You have not got a monopoly of it in Edinburgh. Northeast Fife is currently suffering big-time as well. I was not going to have a moan about that but now you have reminded me, I will.

It is not quite as bad as Railtrack because we were going to be going by train to London on Sunday until we discovered that the west coast mainline is closed and, very helpfully, Railtrack has also decided to close the line between Newcastle and York, or the east coast mainline. So, unless you want to have train, extended bus journey and train, you cannot go by train from Scotland to England on Sunday. I thought that that was very useful."

The stakeholder from Water UK asked if the electronic note of this meeting, previous and future meetings would be put on the website to which the Commissioner confirmed that once they had been de-personalised they would and that if required he could provide a link to it to save any confusion in accessing it. The Commissioner also confirmed that the date and time etc of future meetings was also on the website.

The stakeholder from Aberdeenshire Council referred the Commissioner to the fact that he had touched on the point about our cycle in local authorities and asked the Commissioner what was the future of local authorities billing for this? The Commissioner replied that he had no knowledge about it.

The Commissioner explained that from a water and sewerage household customer perspective an efficient way for Scottish Water to be collecting its revenue. That is not going to be a surprise to anyone because they are paying basically a piece rate, as I understand it for it to

you for issuing bills. Modern utilities would typically believe that they needed something in excess of 5 million billable properties to be genuinely efficient and to be minimising the unit cost of call centre and billing operation and the rest of it. So, with 2.3 million connected customers the economics of billing by Scottish Water with a billing system on its own would be fairly questionable.

The same stakeholder continued by asking if in the context of all the local authorities under challenge within the Efficient Government Initiative where they had to look at support services, backroom services and things like that and areas which no doubt could be looked at. So, it was just if there was something else in train then that could have been influential. The Commissioner confirmed that ultimately it was a political decision.

The stakeholder from Angus Council stated that no one raised that issue when they talk about abolishing Council Tax.

The Commissioner explained that he did not think they had thought about that.

And that equally there was an issue that if the number of Council Tax bands were extended. We can see why that might be a very good idea from a Council standpoint, but from a water charging standpoint because there is an alternative means for a domestic customer to be billed, ie through a meter, what you are going to do is increase the attractiveness of a substantial portion of households switching to a meter, which might be very good environmentally. So, tick that box, but from a social policy standpoint, because there is a desirability of having what is a huge gross subsidy passed to Band A households from a social policy standpoint it would be a very bad idea. So, you have got the environmentally friendly policy, which is great, but the social policy does not compute.

So an increase in the number of Council Tax bands would be potentially a major issue for the water industry and it may mean that however much the Executive wanted to have Councils bill, they couldn't, or they would have to take some different action of – I do not know – having all L & M households or whatever it is going to be, billed at the same rate which is going to have some system issues for you people here. The Commissioner asked if there were any other thoughts or comments, how were things in Northern Ireland and if they were on strike or not?

The stakeholder from Robert Gordon University informed the Commissioner about a debate in Parliament the previous day and Mr X was getting a mauling by Mr Y, which was interesting. The Commissioner informed the meeting that Mr Y knew all about this because he had briefed him in detail about three years previously.

The stakeholder from Water UK informed the Commissioner that his name was mentioned and that he was at the debate yesterday. He also informed the Commissioner that his Office was mentioned several times in the debate, like "Why don't you learn from other people like the Water Industry Commissioner?" Have you spoken to them?

The stakeholder from the Robert Gordon University intimated to the meeting that the Head of Water Services should be well aware of this being a former NOSWAL (sic) employee.

We are having a lot of fun, put it that way, but it is guite interesting being the only person who actually pays for their water on the Water Council since I live in Scotland, and I think the proposed charges represent very good value for money. They're talking about an average of about £500 across the board varying from...this is combined sewage and water. I think it is round about £300 going up to £700. I think my mother has been quoted £700 and she lives in a six bedroom house off the Malone Road. I think personally that that represents pretty good value, but everybody is very unhappy about the way that they are pegging out the rates. At the moment unless they are bringing in metering I cannot see any other way of doing it, but of course you touched on something quite important there, that if they do bring in metering then it is not going to be a very good social policy act and this is something that the politicians actually haven't addressed because there is a big push that they should go towards metering, but we will see.

There is a meeting tomorrow and there will be a briefing by the Chairman on what was discussed today and there are some very interesting points which have come up which in the longer term will have quite a lot of relevance for how things are going to pan out.

The Commissioner commented that from what he saw of the water service the scope for efficiency was somewhat more significant than it was for Scottish Water.

The same stakeholder replied that the Commissioner couldn't possibly say that at a water service meeting.

The Commissioner confirmed that he had already told that to their faces and that it didn't go down terribly well.

The stakeholder from Water UK stated that there was some interesting stuff from Mr X about metering yesterday because he got asked a question about metering within the debate and he was saying well, do you want a high fixed charge and costs, marginal costs of water or what do you want – a cost for the minimum amount you are using? There is a lot of debate there even within the metering subject as to the affordability aspect and yesterday it actually turned into an affordability debate.

The stakeholder from the Robert Gordon University informed the meeting that the General Consumer Council keep pointing out the proportion of household income that goes on fixed bills which is far higher in Northern Ireland than it is anywhere else and the actual average income is about 13% lower than anywhere else in the UK. It is going to be a very difficult one to get right and we will see what happens.

The Commissioner commented that it would be particularly difficult if you try to finance that cost base.

And the same stakeholder agreed and confirmed that with the Water Framework Directive it is actually pushing towards metering. That is basically the best way of effective water consumption.

The Director of Cost and Performance asked if there has been any discussion of competition in Northern Ireland. To which the same stakeholder replied: "I don't think anybody at the moment would want to talk about that. The infrastructure is in a horrendous state. It is going to cost about 3 billion in investment to sort it out and we are talking about the 2.4 billion here, but that is for four or five times the population and you have got similar dispersal of population, maybe not the extent that you would have...

The Commissioner confirmed that actually Northern Ireland was a wonderful comparator with East of Scotland Water, an absolutely wonderful comparator in population density, amount of roads per head of population, all manner of things. It was fascinating. It was a benchmarking dream, Northern Ireland versus Scottish Water.

The stakeholder from Water UK was told the previous day that they had a longer water main per head of population in Northern Ireland than in Scotland and he was racking my brains to think of why.

The Commissioner explained that because Scotland doesn't actually have a very high level of water main per head of population and part of the reason for that is we have got far too many treatment works. Part of the reason for it is that the Scottish population is actually very densely located. 90% of the Scottish population lives within 10 miles of the sea or estuary, an incredible statistic, but it is true.

I suppose Scotland is only 40 miles wide and 10 miles off from both sides is not much. The other interesting thing about metering and volumetric charges is the extent to which it would ever be effective. In other words, if you meter someone and you have an entirely variable

charge, running the bath, the amount of water that you have in your bath, a big bath, costs you 17 pence. If you have got a fixed charge in the way that we have got the marginal cost of the water in your bath above the fixed charge is 7 pence. So, are you actually going to change either the depth or the number of baths that you have for 10 pence? Now, there might be one or two people in society who would, but not very many.

Stakeholder workshop May 2005: Transcript of the day

On Monday 9 May 2005 a stakeholder workshop was held in our offices. Present at the meeting were the Commissioner, Katherine Russell (Director of Corporate Affairs) and a number of stakeholders.

A note of the meeting, taken by an independent company, is reproduced below⁵.

Katherine Russell welcomed everyone to the meeting. Those around the table identified themselves.

KATHERINE RUSSELL: I don't know if the letter explained, a couple of key areas for discussion today and the first one is the Scottish Water second draft business plan which we received on the 20th of April and also our recently published licensing consultation that we published at the end of April. So, really it is an open session. If you have any questions at all, please ask. You don't have to wait until the end. I mean, Alan would like to take any questions that you have. So, I'll pass over to you.

THE COMMISSIONER: Right. We are due to publish a draft determination on the 30th of June. That is what? Seven weeks away now, something like that. I am still counting in weeks rather than days. We received the second draft business plan from Scottish Water about two weeks ago. That plan is due to be published on the 16th of May. Once the draft determination is published there is then an opportunity for all stakeholders to comment on the answer contained therein. It will be published on the 30th of June, as I said. The consultation is open to the 5th of September so that that can be taken on board and a final answer got to by the new Water Industry Commission by the 30th of November which is the last date that that could really be done by in order to ensure that charges are fixed particularly for domestic customers for the period from the 1st of April and the local authorities need the information no later than the end of January, the third week in January, usually. So, that is the process. It is important, and I keep saying this, it is important that representations come from the widest possible range of stakeholders after the publication of the initial draft. In

From January 2005 we decided to include a fuller representation of what was discussed at the stakeholder information days than had been prepared for previous workshops.

other words, even if you like the answer you ought to be commenting that you do like the answer rather than simply us receiving representations from all those who don't like the answer. This is quite important because if you were to look at what happened south of the border last year, there was a fairly substantial move between draft and final to the detriment of customers and that reflected a fairly well organised lobbying from the industry to get more money. So, customers have been conditioned to the increase that was in the draft and probably less conditioned to the increase that was in the final. So, it is important that even if you think the answer is acceptable in the draft that you make sure there is some balance, the responses that come in. Ultimately, if Scottish Water don't like the final determination they are able to appeal it or they will be able to appeal it; the statutory instrument is not yet published but they will be able to appeal it through the UK Competition Commission. If that were to happen, the UK Competition Commission basically do all the work again from scratch but prices in the first year of the determination are held as if they were in the final determination. So, any revisions that the Competition Commission may do which can be up or down as far as Scottish Water and its customers are concerned, would only take effect from year two at the earliest and that would assume that the Competition Commission finishes in nine months. I don't think there's really much else I can say at this stage.

KATHERINE RUSSELL: Anybody any questions? As Alan said, the business plan will be published in full on the 16th which is what? A week today. No questions?

NEW SPEAKER: Will that be available on the website?

KATHERINE RUSSELL: Yes, it will be.

NEW SPEAKER: It will be a short document then, will it?

THE COMMISSIONER: I wouldn't call it short, no. I think I wouldn't try downloading it if your computer is in any way temperamental, as mine is.

KATHERINE RUSSELL: Again, if you would like to have a hard copy, if you either contact our Office or Scottish Water, I'm sure a hard copy will be made available for you. Everything with regards to the review is actually published on our website. All our documents, a full methodology document, our licensing consultation, any correspondence with regards the review between ourselves and Scottish Water is also available on our website. I have some hard copies here of our methodology. Again, if you would like a set please let me know after the meeting and I'll be able to provide you with one, all six volumes.

NEW SPEAKER: Do you have a hard copy of the latest consultation?

KATHERINE RUSSELL: That's what is actually just being printed now and should be available, hopefully, by the end of this week. It is on the website but I can get you a hard copy and I'll make sure there is one sent out to you. Okay. I think we will move on and talk about the licensing consultation.

THE COMMISSIONER: Okay. The overview in terms of time is the following: starting backwards, if you like, the expected date for competitive new entrants to start trading as alternative retail suppliers for non-domestic customers and only for non-domestic customers is the 1st of April 2008. That means, effectively, that they need to have received licences if they're going to be in a position to start trading on the 1st of April some time probably in the latter part of 2007. We also know from the Ministers' commissioning letter that the intention is that Scottish Water should have established a retail subsidiary, an arm's length retail subsidiary from the 1st of April 2006 and that will have a licence. Scottish Water, as the core business, the wholesale business, will remain or is remaining a statutory corporation and, therefore, not licensable because its duties and obligations are set out in statute rather than in a form of licence which explains the difference between Scottish Water's status and unlicensed status and other utilities which have licences, including the Royal Mail.

The current consultation is the first of two consultations that will happen prior to Scottish Water getting a licence for the period from 1st April 2006 until the 1st of April 2008 and probably the central point or one of the central

points in the consultation is a suggestion that Scottish Water's licence and Scottish Water's retail subsidiary's licence from the 1st of April 2006 should be a temporary one, a time-expiring one and such that further responses to consultation about the opening of the market as the time gets nearer and new entrants decide whether they're coming into the market or not becomes clear. If we do not make it such a time-expiring licence then there are only two mechanisms by which licences can be amended and one is by agreement and the other is by appeal through the Competition Commission. It is not liable to be in the broadest stakeholder interest that we rely on those processes given the extent of our nonunderstanding of where things might go in the next two years. There is a lot to be decided and a lot to become clear. So, the two phases of consultation before Scottish Water gets its licence is its initial consultation on the principles of licensing. Basically, the consultation describes in some detail how licences are put together in utilities, typically the role that they play and the extent to which this is applicable or otherwise to Scottish Water and its retail subsidiary. It also considers in some detail the governance arrangements that there need to be in place between the two companies particularly when the arm's length subsidiary is ultimately owned by its arm's length trading partner and the compliance regime that is likely to be required to ensure that things like pricing of services supplied between the two companies is done on a proper arm's length basis and the like. So, not really very dissimilar for those of you who have looked at the energy industry to the arrangements that were put in place when competition was first introduced to retail customers - electricity - but the distribution and supply of businesses were wrapped up in the same company. Ultimately, of course, they were then separated and in many cases swapped or traded on. The second form of consultation - well, first of all the consultation that was launched on the 28th of April runs until the end of July, for three months, and there is then a period in which we will respond to that and take the views that we get back into account in allowing for a draft licence to be prepared. Our current view is that it should be a timeexpiring licence and once that draft licence is available that too will be published and those people who will be interested will be more than welcome to comment on it. It will be quite an important document, as I say, because

it will be the document which regularises the relationship between the non-domestic customer and Scottish Water ultimately, and the wholesale business. It is also not impossible that many current customers may choose to become licensed retailers and that has happened in the energy industry. Once that consultation on the draft licence is complete, Scottish Water would then be – Scottish Water's retail subsidiary, sorry, would get its licence. That will have to happen before April 2006 and that is the licence that would govern Scottish Water's retail subsidiary's behaviour for the next two years.

Shortly after April 2006, there would be another round of consultation, this time on essentially the principles that should be being used in designing licences for new entrants and, indeed, for the permanent licence of Scottish Water's retail subsidiary on the assumption that we go down that route. Again, pretty much the same pattern. That would then lead into a template licence being published for consultation in the early part of – well, very late in 2006 with a view that that licence would be finalised some time in the early autumn of 2007 and be available for application shortly thereafter and then that leads to market opening in April, 2008.

NEW SPEAKER: What are the major differences between what is being proposed in Scotland to the competition framework in England and Wales?

THE COMMISSIONER: They are not major differences, they're just different frameworks. In England and Wales well, the one thing we have got in common is no competition for domestic customers. That really is probably about the end of the similarities. In England and Wales at this point only customers using over 50 million litres of water per year at a single site will be eligible for competition. So, if you are a business and you've got two separate sites across the road from each other using 40 million litres a year, in the English system you are not eligible for competition despite the fact that you are using 80 million litres in the same water supply zone. So, that's the way the rules work. Additionally, there is no competition envisaged in the sewerage or effluent markets other than the sort of activities that are occurring now around minimisation or bulk transport of wastes, but no retail competition, no common carriage-type

competition on the sewerage side. In Scotland, common carriage on the water and the sewerage side is being ruled out on the grounds of public health. It is important to understand what the Executive actually legislate on. The Water Services Act which brought all this in effectively legislated on two things: it legislated on the regulatory framework in general and it legislated on issues of public health and social policy. It did not legislate because it cannot legislate on issues of competition which is reserved for the Westminster Parliament. So, what the Executive has done is effectively create a framework which allows for the Competition Enterprise Acts, the Westminster Acts, to be regularised in a framework which maintains the Executive's public health and social policy goals. Effectively, what is possible at the end of all that is retail competition and the licensing framework is being put in place in terms of the role of the new Water Industry Commission in issuing licences and looking after the licensing of new entrants and the management of the market, if you like. All non-domestic customers are eligible or will be eligible from April, 2008 to select their supplier. That supplier may just be, effectively, the biller, customer services agent or it may choose to do other things beyond that. So, it could choose to offer a gas or electricity supply or a telephone package or various other things many utility retailers now do or it could focus just on water. Alternatively, it may get involved in waste management or water efficiency advice and that sort of thing on site. The licence will only cover all those activities which are delivered through the core business of Scottish Water, ie the public network. So, anything that is not related to the public network, water abstraction from canals or from the sea with the fish processing industry, so that will not be affected in any way by this Bill, by this Act.

NEW SPEAKER: Alan, could I ask what the key criteria for the issuing of a licence by the Water Commissioner will be? What do applicants have to demonstrate in order to require a licence?

THE COMMISSIONER: That they can do what they say they will do and do it in a regular way. All the Act is saying is that new entrants need to be fit and proper. What's that effectively going to mean? Well, it's going to mean probably slightly different things depending on the

scope of what the licence is required to do. The precedent for that would be, again, the approach that Ofgem took in licensing suppliers of electricity and gas who are only supplying non-domestic customers have different hurdles from those who want to supply domestic customers. So, in the circumstances where you took – I'm trying to take one that's not – you take a, sort of, major industrial estate where you've got three or four very large suppliers, it is not impossible that those suppliers could see some form of licence in order to enable them to buy on a wholesale basis from Scottish Water and deal with the, sort of, settlement arrangements between the various users of the water by themselves. I would have thought that that licence is going to be in many ways more restrictive than, let's say, if Cumbrian Utilities Ltd come in and want to supply all the newsagents in Scotland. It would be a less restrictive licence but probably have a higher threshold to be awarded than an industrial supplier.

NEW SPEAKER: In other words, it's horses for courses?

THE COMMISSIONER: It's horses for courses and it's one of the things discussed in the consultation and we have sought views on.

KATHERINE RUSSELL: Are there any other questions?

NEW SPEAKER: Based on that then will the licence be restricted to the particular constituency that is mentioned in the application? As you say, if you have an industrial estate and there's different companies within that say okay, can we please have a licence, would they be only restricted to that particular geographical area or that constituency or once they've got a licence would that allow them to potentially roam to the newsagents thereafter?

THE COMMISSIONER: It would depend on the criteria on which the licences were awarded. Again, I can't say it definitely happens like this because it is subject to consultation, but were people to believe that the approach of, you know, limited licences was appropriate then if there were to be a lower threshold in order to get such a licence then there would have to be the corollary

which would be that they would be limited to what they said they were going to do.

NEW SPEAKER: So, a company like Forth Ports which have ports across Scotland, they would be restricted to supplying water to the ships that come in?

THE COMMISSIONER: No. If they want to have a licence in order to be able to buy wholesale and they applied for the licence on the basis - again, this is all hypothetical – if they applied for the licence on the basis that we want to be a retailer, we have set up a special company to on-sell this to ourselves, we'll settle the settlement arrangements between the various different ports that we own, that is something that cannot reasonably be ruled out, but if the licence were given on the basis that that is all they were going to do then that would be all that they would be able to do. They may want to be able to do more than that because they may have some sites next door to them or other properties that they own or lease to other people that they may choose also to try and supply in which case they would have to say that's what they were doing with their licence. The only point I think I would try to make is that in a consultation environment we have floated the idea that a restrictive licence in terms of how it impacts may be easier to obtain than one which is genuinely open and allows you to do anything and supply any customer.

KATHERINE RUSSELL: Are there any other questions about the licensing consultation?

NEW SPEAKER: In terms of the, sort of, general licence then, would such a company have to supply any customers?

THE COMMISSIONER: A general licence, I think the principle of universality is pretty important, so I would have thought yes that if someone is coming in saying there is no specific purpose for this, we're going to supply the ports, but if they're going to supply all customers I don't think it's going to be — you know, it would be unlikely that they would be able to say we're only going to do it in the Central Belt because that is something that we would respond, I suspect, negatively to.

NEW SPEAKER: Is there likely to be a retailing last resort in the case of a licence being granted but for some reason the retailer suffered a catastrophic failure, etc, and therefore all their customers suddenly having their service withdrawn? Is there going to be a fallback position?

THE COMMISSIONER: It will be Scottish Water as a wholesale business would take it on at that point. There is likely to be as the market begins to open up a quite active debate about whether that is the appropriate route or not both in terms of cost and in terms of facilitating the market in which Scottish Water and its retail subsidiary are not perceived to be acting against the customer's interest.

NEW SPEAKER: I was quite interested in looking at some of the conditions in the bit about sustainable development that you are proposing perhaps goes into licences. Does that, sort of, come from discussions leading up to the Water Services Act or is it something you decided is a good idea that should be looked at? I'm just wondering what the background is.

THE COMMISSIONER: The background to it is that it is in energy licences and, therefore, it has to be an option for water and sewerage supply licences and it is there for comment by stakeholders. I don't think there would be – it wouldn't be – yes, it is an option.

NEW SPEAKER: Is there anything to stop a public authority applying for a licence such as a local authority?

THE COMMISSIONER: I can't see why there would be. In fact, if I was the Health Service it might well be a way of reducing some costs.

KATHERINE RUSSELL: Are there any other particular questions that you would like to ask about the process or the charges or the work of our office? Particular questions that we could answer for you today?

NEW SPEAKER: The threshold of non-domestic customers, what will it be?

THE COMMISSIONER: Zero. Any non-domestic customer –

NEW SPEAKER: Definition?

THE COMMISSIONER: The definition of a non-domestic customer is one of these interesting ones. There appears to actually be a definition of what a non-domestic customer is in Scotland which there is not in England and Wales and the definition appears to be if you have a Council Tax band on the property then you are domestic and if you do not have a Council Tax band you are non-domestic. So, there are, no doubt, crofts and farms and various tourist businesses throughout Scotland that might find themselves non-domestic for the purposes of this particular Act and that might suit them or it might not.

NEW SPEAKER: And common carriage is completely ruled out?

THE COMMISSIONER: Yes, common carriage is completely ruled out on the grounds of public health both on the water and the sewerage side.

KATHERINE RUSSELL: I thought I would have lots of questions from you this morning. Is it because it's a Monday morning? Shall we have it in the middle of the week the next time?

NEW SPEAKER: Can I ask a couple of general questions, representing civil engineers, specifically, as you know, and obviously very busy on the current Q & S II programme and hoping to be very busy on the Q & S III programme. The recent ministerial announcement on unlocking development constraints, what impact do you think that might have on the programme?

THE COMMISSIONER: I think it is important to be clear, and this is where people are sometimes not terribly good at remembering what was in the history book, but within the Quality Standards II investment programme there was in the original definitions provided by the three authorities, £90 million after efficiencies available for development constraints and Ministers added a further £41 million to deal with first time connection in rural areas and other

matters of constraints within rural areas. So, there was about £131 million. It is not clear that as much of that has been spent in that particular area as ought to have been, but the programme isn't yet finished and maybe there is going to be a rush of development constraint removal. So, there is a year left of the capital programme and we'll see what happens, but it is just a matter of fact that there was this £131 million in the programme as originally defined in response to a letter I wrote to the three authorities in May 2001. In this current investment programme I think it is highly likely that the cash amount both in nominal and in real terms will be substantially greater than £130 million and that the buying power of that will also be greater again and the reason I say the buying power will be greater is because Scottish Water's contributions to developers for removing development constraints will be substantially reduced under the Act. So, Scottish Water will make a contribution and be purely responsible for the upstream part of the infrastructure, upgrade costs, which is bringing it in line with the water industry south of the border and is bringing it into line with the energy industries across the UK. So, because there is that contribution that has to be made by the developer to the development of a particular site, the money that Scottish Water will go further. So, what the Ministers' advice or guidance to us is doing is basically highlighting the need for more money which will buy more than what was already a fairly significant amount of money that was in Q and S II. The guidance is fairly specific. It says 15,000 new homes per year, important to emphasise the word 'new'. That is new build, it is not where something is taken down and something else put in its place. So, the actual house building in Scotland is running at something like 20,000-21,000 a year, but many of those are on re-build sites rather than entirely fresh green field sites. So, the programme has been put in place and built on the assumption that there are 15,000 units of genuine green field investment.

NEW SPEAKER: I think that caused some confusion when the announcement was made because it sounded as if something new was coming and in fact when looked at at first viewing as a reduction.

THE COMMISSIONER: Yes. It is certainly not meant as a reduction.

NEW SPEAKER: And the other area in which it was silent was in who decides which development goes ahead. Have you any thoughts on that or have you been consulted, indeed, on that?

THE COMMISSIONER: I don't think anyone needs to consult with us on that at all; it is a matter of ministerial policy and it is a question for those in charge of the planning process across Scotland to decide where those units are required. There will also, of course, because of the developer contribution, be more of a market-driven signal as to whether the development is going to be viable or not because if the developers are having to put more of their own money into putting the infrastructure in place then they're less likely to want something put in that is more speculative. The Executive has also allocated more money in the communities' budget or public housing budget, however it is termed, in order to ensure that affordable housing is included and they have the money for the contributions that they will be expected to make.

NEW SPEAKER: Can I put not a follow-on but a sort of parallel question about Q & S III delivery. The deliberations currently carried out, Scottish Water put their draft to you and the continuation of Solutions, Scottish Water Solutions as the chosen delivery model, obviously that is still under consideration, which is one point really rather than a question, but as far as the industry is concerned, the civil engineering industry which is now working probably at capacity in terms of water, any change to the Solutions model would be an impact on delivery, we believe, and therefore on costs. I wouldn't have thought that would come as a surprise?

THE COMMISSIONER: Well, we have absolutely no remit in determining how Scottish Water decide how it is going to deliver its capital programme and it is a matter for Ministers as to whether they wish to give the requisite approvals that would be required to extend Scottish Water Solutions' viewpoint. The only area in which we have any degree of impact on this is that we will set targets which are appropriate in terms of amounts of money and whatever that are required to deliver outputs, and that may or may not be in line with the price list that Scottish Water Solutions thinks is appropriate because

if Scottish Water Solutions is high priced then I don't see any reason why Scottish Water customers should pay for it and if it's not high priced then it is something we have no need to worry about, but the prices are being set not in relation to Scottish Water Solutions' prices, they're being set in relation to appropriate market prices that are paid by water and sewerage utilities throughout the U.K.

NEW SPEAKER: So, it is benchmarked against --

THE COMMISSIONER: Absolutely.

NEW SPEAKER: Just a question on the licence. Have you thought about how long the licence might last for in terms of numbers of years?

THE COMMISSIONER: No, no. The only thinking we've done on this at this point, probably not really a question at this point of the consultation process, the only thing we have thought about is that the initial retail subsidiary of Scottish Water ought to have its licence for a time-limited period, but beyond that, you know, is there any difference between a 25-year notice period and a permanent licence? I'm sure that there is.

KATHERINE RUSSELL: But that is something that we will be consulting on.

NEW SPEAKER: Will that be like a separate consultation?

THE COMMISSIONER: That will be consultation 3, which is about the principles that would apply for the new entrants to the market.

NEW SPEAKER: So, the Scottish Water one, is that likely to be just the two years as you suggested in here?

THE COMMISSIONER: Depending on the response from the stakeholders, yes, and it's not Scottish Water, it is important to emphasise, it is the retail subsidiary of Scottish Water because there are likely to be other issues that arise in terms of compliance and governance as to what the subsidiary can be called and the views of new entrants.

KATHERINE RUSSELL: Are there any other questions? Are there any issues that you would like to raise? This has been one of the shortest stakeholder meetings. If you think of any questions after once you leave, please contact us or e-mail, you have our e-mail address there, if there are any points you would like to raise and if there are no questions or issues I would just like to thank you very much for coming along this morning and I won't hold it again on a Monday morning. I think we'll definitely move it. Okay, thank you very much.

Reference	Issue
WIC 1	Commercially sensitive customer revenue information and data request – requests details of non-domestic customer numbers, bills, volumes etc, split into various bandings. This information is used to establish a base for expected non-household revenue streams, and to monitor any material movements from this base.
WIC 2	Investment programme monitoring – advises the requirements for the monitoring of delivery of investment via the Planned Investment Return and the Investment Quarterly Return.
WIC 3	Review of infrastructure renewal & maintenance – request for estimates of asset condition and replacement costs to assist with Quality and Standards process.
WIC 4	Household revenue information and data request – request for details of domestic customer numbers, billing and collection levels, details of any relief of charges and analysis of secondary income. This information is used to monitor revenue from households and aids understanding of the issues of affordability and collectability.
WIC 5	Customer Service Performance Reports – expected requirements for the monitoring of the provision of customer service in general and Guaranteed Minimum Standards in particular, by way of three specified reports.
WIC 6	Quality performance assessments – our intention to introduce quality performance assessments of written complaints received by the water authorities as an independent monitor of the service actually received by customers.
WIC 7	Scheme of charges 2001-02 – request for authorities to submit proposed scheme of charges for the following year and supporting data.
WIC 8	Dates for submission of information to this Office – clarification on timing and content of our information requirements following on from the Information Project.
WIC 9	Non-domestic debt analysis – request for analysis of non-domestic debt figures to allow us to monitor the financial impact of debt levels and assess the efficiency of the authority's collection systems.
WIC 10	Information Project Action Plan – our feedback to the three authorities on the content of their Action Plans.
WIC 11	Not used.
WIC 12	New Opex and Spend to Save – our criteria for assessing the water authority's case for additional expenditure on new operating expenditure and 'Spend to Save' initiative.
WIC 13	Efficiency analysis – impact of PPP schemes on controllable operating expenditure.
WIC 14	Special agreements for large customers – request for information to monitor the special agreements created throughout the year and the financial impact they will have on future charging schemes.
WIC 15	Capital investment and efficiencies – summary of investment profiling after efficiencies that will be incorporated in the 2005-06 Strategic Review.
WIC 16	Development constraints & rural sewage connections – request for costs and outputs of high priority investment plans.
WIC 17	Annual Return submissions – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 18	Q & S final output – project level information to be included in Quality and Standards.
WIC 19	Investment Appraisal Project – discussion of involvement of water authorities in next phase of project and introduction of audit procedures to examine investment appraisal processes.
WIC 20	Request for data relating to depots, labs & office buildings – request for information to assess any possible impact of changes due to the inception of Scottish Water and any impact on operating expenditure.
WIC 21	Critical information for Strategic Review of Charges – request for information on WIC 1, inter authority trading, value chain analysis retail and capital investment.
WIC 22	Request for full response to WIC 1 request for full financial year 2000-01 and six months to 30 September 2001. Also request for information about number of meters, meter sizes and any special arrangements. A format was attached for this information.
WIC 23	Notification to Scottish Water of the post-efficiency profile of capital investment for each authority contained in the Review. Monitoring of capital investment programmes for 2002-06 Quality and Standards.
WIC 24	Request for a submission of the authority's strategy for tackling leakage.

WIC 25	Requirement for Scottish Water to provide monthly resource accounting and budgeting tables (RAB tables). These financial performance tables allow us to monitor financial trends and performance against targets.
WIC 26	Request for current status report on work undertaken by the Scottish Water Transition Team and revised Action Plans to be submitted to this Office.
WIC 27	Dates for submission of information to us – clarification on timing and content of our information requirements for the year 2002-03.
WIC 28	Procedure of information returns between this Office and Scottish Water: establishment of formal criteria to be followed for the submission of information requested by us, including sign-off procedures to be followed.
WIC 29	Annual Return submissions (2001-02) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 30	Accounting separation: following on from the Strategic Review of Charges and the Minister's acceptance of the Commissioner's advice that accounting separation be implemented into certain elements of Scottish Water's business, this letter outlines the Commissioner's initial thoughts on taking this forward; including first thoughts on the elements that constitute core, non-core, retail, and non-retail activities.
WIC 31	Dates for submission of information to us for the year 2003-04 – clarification on timing and content.
WIC 32	Quality and Standards I project list. In order to identify the Quality & Standards I projects that were not completed prior to the creation of Scottish Water, we request information on status of projects. This is important for establishing the baseline for Quality and Standards II.
WIC 33	Annual Return submissions (2002-03) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 34	Strategic Business Plan submission – detailed income and expenditure projections 2003-04 to 2005-06. This information submission, referred to as 'T tables' is required to support the analysis of the Business Plan submission.
WIC 35	Not used.
WIC 36	Communication and progress monitoring: suggested framework for meetings between this Office and Scottish Water to deal with regulatory issues.
WIC 37	Request from this Office to Scottish Water seeking to establish the extent to which data exists to populate a capital maintenance serviceability model. Request in two parts: 1) provide information on the availability of the data; and 2) provision of the available data.
WIC 38	Publication of Annual Return: following on from numerous requests from customers for the publication of Annual Return data, this letter to Scottish Water outlines our intention to place all Annual Return 2002-03 information in the public domain.
WIC 39	Finalisation of the Quality & Standards II capital investment programme: letter summarises the current definition of the Q&S II capital investment programme and the development of the WIC 18 list – this letter reviews progress and agrees steps forward on both matters.
WIC 40	Strategic Review of Charges 2006: draft timeline for the next Strategic Review of Charges period issued to Scottish Water, outlining key information requirements and dates.
WIC 41	Reconciliation of WIC 18 with Finance Committee submission of 23/02/04: request to Scottish Water to provide a reconciliation of the current (at date of the letter) WIC 18 list (version 2.1) to the table in Alan Alexander's (Chairman, Scottish Water) letter of 23/02/04 to the Finance Committee of the Scottish Parliament headed 'Scottish Water Capital Investment Programme'.
WIC 42	Dates for submission of information to us – clarification on timing and content of our information requirements for the year 2004-05.
WIC 43	Annual Return submissions (2003-04) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to this Office.
WIC 44	Finalisation of the WIC 18 baseline for Quality and Standards II: confirmation provided as to the sequence of events for finalising the WIC 18 process.
WIC 45	Draft accounting separation tables: following on from WIC 30, this letter provides a set of first draft tables for the collection of information on Scottish Water's operating costs. A timeline for submission, refinement and dialogue exchange within the Strategic Review of Charges process is supplied, and formal feedback is invited from Scottish Water.

WIC 46	Request for Scottish Water to produce first draft Strategic Business Plan as part of the Strategic Review of Charges 2006-10 process. Guidance notes, definitions and table templates issued along with letter. Timetable for dealing with issues and clarifications as well as signing off instructions also provided.
WIC 47	A request for a copy of a final version of the current capital programme and a clear statement of the likely delivery of the Quality and Standards II by the end of March 2006 (project by project). This information is essential to our finalisation of our proposed approach to assessing the scope for efficiency in capital expenditure.
WIC 48	Request for response to concerns that the Reporter, appointed by the Commissioner to monitor Scottish Water's performance, has regarding the accuracy of some of the cost estimates for projects in the Quality and Standards III programme.
WIC 49	Concerns have been raised over the alteration of original sewerage schemes by the people of Arran. To allow a full response from WICS to these concerns, this is a request for sight of early investment appraisals or project feasibility studies outlining the original work planned for Arran as funded via Quality and Standards II.
WIC 50	A request for information that will allow us to separate out Public Private Partnership (PPP) costs. Also attached are guidance notes for this information request. During discussions and correspondence regarding the 2002-03 Costs and Performance Report, Scottish Water raised concerns about including the costs of its PPP schemes within the benchmarking analysis of operating expenditure carried out by the Commissioner's office. The Commissioner's office agreed that it would look into Scottish Water's concerns and examine ways to remove PPP costs from this benchmarking.
WIC 51	A request for feedback from Scottish Water on the findings of a reconciliation analysis carried out between the submission for WIC 47 and the quarterly Capital Investment Return for Q2 2004-05.
WIC 52	A request that Scottish Water submits information for every trade effluent customer it has, in order to understand the incidence effects of tariff change. In order to carry out the Strategic Review of Charges 2006-10 and to analyse Scheme of Charges submissions, the Commissioner requires information on the discharge characteristics of trade effluent customers. A list of appropriate definitions was supplied along with the request.
WIC 53	Request for Scottish Water to produce second draft Strategic Business Plan as part of the Strategic Review of Charges 2006-10 process. Guidance notes, definitions and table templates issued along with letter. Timetable for dealing with issues and clarifications as well as signing off instructions also provided.
WIC 54	Request for information relating to Scottish Water's water and waste water treatment works. As part of analysis of Scottish Water's first draft Business Plan submission, a list of each water and waste water treatment works is required, showing: the name of the works, the Scottish Water operational area in which it is located, a location marker (eg grid reference or nearest community), the population or population equivalent served, the design capacity of the works (MI/day or kg(BOD5)/day).
WIC 55	Regulatory Accounting Tables: Following on from WIC 30, this letters distributes the first draft of these tables to collect information Scottish Water's operating costs. A timeline for submission, refinement and dialogue exchange, within the Strategic Review of Charges process is supplied, and formal feedback is invited from Scottish Water.
WIC 56	Request for Scottish Water to submit a draft cost base to allow the Commissioner to carry out effective benchmarking of Scottish Water's cost base against those submitted to Ofwat. Benchmarking exercises to be carried out in line with those conducted by Ofwat. To be consistent with the investment plan costings, Scottish Water will provide a cost base submission on a 2002-03 basis (as stated in the definitions). However, WICS also understands that the costings for limited parts of the investment plan might be revised and be carried out on a 2003-04 basis. If this is the case, then for these revised elements, WICS will expect Scottish Water to identify these in the commentary and provide a full explanation of how any adjustments for the pricing year have been carried out (including any inflation indices and efficiency factors that have been applied).

WIC 57	Request for information about Scottish Water's current tax liabilities and its understanding of potential tax liabilities that may affect customers' bills in the future. This information will be used by WICS to analyse Scottish Water's revenue requirement in the Strategic Review of Charges 2006-10. The need for this information has arisen because Scottish Water has indicated that it now believes it will be liable to pay Corporation Tax in the 2006-10 period.
WIC 58	In order for WICS to allow due scrutiny of Scottish Water's proposed investment at current PPP sites as part of its delivery of Q&S III outputs, as outlined in its first draft Business Plan of October 2004, Scottish Water are requested to submit copies of all contracts related to these projects. WICS wishes to ensure that the proposed investment reflects the contractual obligations of Scottish Water and is not covered under the obligations of the consortium partner to each contract.
WIC 59	WICS writes to Scottish Water advising it of the regulatory capital value (RCV) and rate of return that the Commissioner is minded to use in the draft determination of the Strategic Review of Charges 2006-10, due to be published in June 2005.
WIC 60	Dates for submission of information to the WICS – clarification on timing and content of WICS information requirements for the year 2005-06.
WIC 61	Annual Return Submissions (2004-05) – sign off data accuracy – required signatories for signing off Annual Return Tables submitted to WICS.
WIC 62	Following submission by Scottish Water of its second draft Business Plan, WICS writes to Scottish Water requesting increased information on the investment plan within the second draft Business Plan.

27 April 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 1: COMMERCIALLY SENSITIVE CUSTOMER REVENUE INFORMATION AND DATA REQUEST

1. Commercially sensitive information

In carrying out our functions as regulators we may request information from your organisation which is commercially sensitive, particularly in light of the Competition Act 1998. Any information marked 'Commercial in Confidence' will be restricted in its distribution within this office and will not be disclosed to any third parties without your express permission. The information will be securely filed in the office.

2. Customer data request

I would be grateful if you would provide the information detailed below relating to non-household customers. The data should relate to actual figures for the year 1999-2000 and budgeted figures for the year 2000-01. We would like to receive more detail for larger users and our request is detailed below.

a. For customers with water volumes > 100,000m3

- Customer name
- Volume of water
- Water bill
- Rateable value
- Sewerage bill
- Trade effluent bill
- Number of customer sites
- Site locations
- · Customer business sector

I am aware that information on the above was supplied previously but using 1998-99 data and part 1999-2000 data.

b. For customers with water volumes < 100,000m3

- · Total number of non-household customers by customer business sector
- Total volume of water by customer business sector
- Total water bill by customer business sector
- Total rateable value by customer business sector
- Total sewerage bill by customer business sector
- Total trade effluent bill by customer business sector
- Number of customer sites by customer business sector

This information for customers with water volumes < 100,000m3 should be split using the following bandings:

- 50,000-100,000m3
- 25,000-50,000m3
- 10.000-25.000m3
- 1,000-10,000m3
- <1,000m3

c. For customers who have unmeasured water volumes > £250,000 rateable value

- Customer name
- Water bill
- Rateable value
- Sewerage bill
- Trade effluent bill
- Number of customer sites
- Site locations
- Customer business sector

d. For customers who have unmeasured water volumes < £250,000 rateable value

- Total number of non-household customers by customer business sector
- Total water bill by customer business sector
- Total rateable value by customer business sector
- Total sewerage bill by customer business sector
- Total trade effluent bill by customer business sector
- Number of customer sites by customer business sector

This information for customers with rateable values < £250,000 should be split using the following bandings:

- £100,000-£250,000
- £50,000-£100,000
- £25,000-£50,000
- £10,000-£25,000
- < £10,000

I intend to use this information to establish a base for expected non-household revenue streams, and to monitor any material movements from this base.

I would require actual information on a quarterly basis together with an analysis of any material variations against budget and previous quarter. Materiality is set at a movement of 10% or greater on individual 'large user' balances (ie consumption > 100,000m3 or rateable value > £250,000). Materiality for small and medium users is also 10%, calculated on the total balances within the defined bandings.

If the customer information is available across different systems you should try where possible to match specific customer information in your analysis without losing visibility of the detail required above.

I understand that it may be difficult to collate with current system limitations. However I feel it is essential for the monitoring of the non-household customer base. I would be willing to provide limited resource to assist in the preparation of this information should it be required. Please contact XXXX or XXXX if you need further clarification on the information requirements.

You should aim to provide a first cut of this information by Friday 19 May 2000.

Please find attached appendices detailing our required layout and business sector split. For your information find enclosed the large user analysis completed by my finance team using the information provided by your team.

Yours sincerely

2 May 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 2: INVESTMENT PROGRAMME MONITORING

In my letter of 6 March I advised the expected level of investment in 2000-01 by XXXX of Scotland Water Authority. This letter advises my requirements for the monitoring of delivery of this investment, by means of two returns, the Water Industry Commissioner's Planned Investment Return and the Investment Quarterly Return. This latter return, as outlined below, is designed not to revisit each investment project each quarter but rather to highlight material changes.

Ongoing independent monitoring of investment progress – both as regards value for money and achieved quality outputs – will be critical as public scrutiny of the industry increases. The attached returns are likely to be integral both to the Quality and Standards and asset management initiatives. To that end, quality drivers have been added to the attached Planned Investment Return.

Investment and the price cap

In the Strategic Review of Charges 2000-01 and 2001-02 I agreed with your requirement for a total investment spend by XXXX of Scotland Authority in 2000-01 of [East: £180 million, North: £156 million, West: £198 million]. This was divided into three categories: Backlog, Infrastructure Replacement and Other Investment as outlined below:

	East	North	West
➤ Backlog	£53million	£27million	£60million
➤ Infrastructure Replacement	£30million	£40million	£42million
➤ Other Investment	£97million	£89million	£96million
➤ Total Investment	£180million	£156million	£198million

In the event, the price cap set by Ministers was slightly lower than would have been needed to fund this level of investment. The revised price cap allows for investment of:

	East	North	West
➢ Backlog	£20.5million	£40million	£14million
➤ Infrastructure Replacement	£30million	-	£42million
➤ Other Investment	£97million	£88million	£96million
➤ Total Investment	£147.50million	£128million	£152million

As a result of the Ministerial decision on the price cap, I now expect a total investment spend of [East: £147.5 million, North: £128 million, West: £152 million] in 2000-01 by the XXXX of Scotland Water Authority. I propose to monitor investment spending during the year and reconcile spending to this expectation.

The WIC Planned Investment Return

The purpose of the WIC Planned Investment Return (PIR) is to inform me of your investment proposals, at project level, arising from the price cap. This return will also highlight the output drivers for the project required by the quality regulators.

This return is materially the same as the format which was used to collect information for the Strategic Charges Review. The project categories have however been changed from the three noted above to:

- Infrastructure maintenance
- Non infrastructure (above ground asset) maintenance
- Infrastructure improvement arising from the Quality and Standards review

- Non infrastructure improvement arising from the Quality and Standards review
- Other capital investment for enhanced levels of service and to improve the supply/demand balance.

It is understood that allocation of projects to these five new categories may change the apparent mix of the investment. It is however critical that this process is closely linked with the Quality and Standards process and that there is a demonstrable way to show that the Quality and Standards programme is delivered and that customers are getting the benefit of the investment promised as a result of the higher charges.

A copy of the PIR return is attached, part completed with investment information provided to me during the Strategic Charges Review. The related reporting requirements and definitions information is also attached. You should update the return and confirm your agreement to the project categorisation shown. The categorisation relates the key issues in Quality and Standards to the Ofwat definitions for expenditure by purpose. As we have discussed, the use of Ofwat definitions is central to ensuring comparability and benchmarking of performance and hence the process of successful economic regulation. The categorisation may be revisited in the course of the development of definitions for the common asset management process endorsed by the Minister in her response to the Strategic Charges Review.

The programme information provided in the return must be able to be fully reconciled with the Investment Programme 2000-03, as approved by the authority Board. The total of investment for 2000-01 reported in the return is expected to be [East: £147.5 million, North: £128 million, West: £152 million], as discussed above. New or amended project information to that shown on the enclosed return copy should be highlighted as stated in the notes on reporting requirements.

The Planned Investment Return will be shared with the quality regulators, the Scottish Environmental Protection Agency and the Water Quality team in the Scottish Executive, in order to ensure that it picks up all their best expectations of necessary investment in the period covered by this return.

The WIC Investment Quarterly Return

The purpose of the WIC Investment Quarterly Return (IQR) is to monitor progress, at project level on a quarterly basis, the investment programme reported in the PIR return. Sample copies, together with the related guidance, are attached. This will provide – for the first time – operational certainty for the water authority and for customers as to where charges levied will be spent.

You will notice that this return is very straightforward and need only be completed for projects where actual or forecast expenditure has materially changed. It is, therefore, a mechanism by which the planned investment return can be updated at minimum cost (in time and money) to the authority, whilst ensuring that all regulators know the latest status of all agreed projects.

The IQR Return will inform progress towards delivery of the expected investment level. Further, the project level information gathered will in due course inform my views on the cost effectiveness of the authority's investment expenditure.

I would take this opportunity of emphasising that the quarterly return is not expected to be onerous. The aim is to identify and highlight (both for the economic and quality regulators) material changes from the planned investment programme. Changes per se may be a cause for concern (project delays or cost overruns) but can equally be good news (efficiencies or earlier delivery of the desired outcome). The aim of the return is not to revisit each project during each quarter, but rather to focus only on the material changes from the expected plan.

The frequency and content of this return will be reviewed after three to four quarters. This review will ensure that I am collecting the information, which I require, in a manner which minimises the workload for the water authority. I will, of course, be open to suggestions which allow my goals to be met in terms of monitoring and project effectiveness assessment, but could reduce the workload for the water authority.

Programme of Returns

Completed returns are required no later than the dates shown below:

PIR Return Friday 9 June 2000
WIQ Return Quarter 1 Friday 11 August 2000
WIQ Return Quarter 2 Friday 10 November 2000
WIQ Return Quarter 3 Friday 19 January 2001
WIQ Return Quarter 4 Friday 20 April 2001.

Consultation on the Returns

The format and content of the returns have been developed in consultation with your officials. For the IQR Return the consultation established that all the data points required are, or shortly will be, collected within the authorities' management information systems on a monthly basis and can be readily consolidated into quarterly returns.

In setting the dates for the returns I have responded to views put forward by authorities on the time required to provide accurate returns.

XXXX will provide directly to XXXX electronic copies of PIR and IQR Returns and guidance notes in the course of this week. XXXX will also provide any further information required.

Yours sincerely

22 May 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 3: REVIEW OF INFRASTRUCTURE RENEWAL AND MAINTENANCE

The Scottish Executive has forwarded to all of us a timetable for the Quality and Standards Process. It is clearly in the interests of all of the authorities and in the interests of customers that investment be planned and costed in as rigorous a fashion as possible. You will note from the timetable that my Office has to review maintenance and infrastructure renewal options on a preliminary basis as an input to Phase One of the Quality and Standards process. We certainly appreciate that each of the water authorities is continuing to develop their understanding of the condition and performance of their above and below ground assets. However, we would appreciate receiving your current best estimates of asset condition and replacement cost as soon as practical. These cost estimates should not include any allowance for an incremental performance improvement.

I attach a matrix, which I would be grateful if you could complete. I also attach a copy of the Ofwat definitions of condition, to which I would be grateful if you could adhere as far as possible. If there is any doubt (other than that resulting from the level of statistical sampling which has been completed) in how an asset has been categorised, please reference this in a footnote. The expected life of each category of asset should also be entered. If an asset is costing more than 1/expected asset life, even if its performance is rated higher than 5, then that asset should be rated as a category 5 asset. In all such circumstances, please indicate by means of a further footnote, what the actual current performance of the asset is; and the estimated annual spend on maintenance.

I recognise that the data which you provide at this time will be provisional. Not only are the authorities all working to improve their understanding of their assets, but the asset management initiative will define in detail the definitions and procedures, which each of the authorities and this Office will use in order to ensure comparability. The information which you will provide will, however, be an important input to the costs of maintaining the existing infrastructure and dealing with past under-investment.

I will require this information by 30 May 2000. If I can provide any further information, please do not hesitate to contact me.

Yours sincerely

08 Aug 2000

To Chief Executive of: East of Scotland Water Authority **North of Scotland Water Authority West of Scotland Water Authority**

WIC 4: HOUSEHOLD CUSTOMER REVENUE INFORMATION AND **DATA REQUEST**

I wrote to Finance Directors on 14 July 2000 requesting data on the number of households, billing and collection levels on a council tax banding and local authority area basis. I understand from the Finance Directors that such data needs to be collected from the local authorities, which will require negotiations with and computer programming by the local authorities to ensure delivery.

Given that this is the situation, I would take the opportunity to go further in my request and obtain data that will be useful in not only monitoring revenue from households but also understanding the issues of affordability and collectability backed up by data.

The information on households, along with the analysis of secondary income included in my request of 14 July, will complete the revenue picture of the authorities. As you know, I have already received customer and revenue data on non-households and discussions are on-going with your staff on how the data submitted can be improved. The Strategic Review of Charges recommended the revenue level required for the two-year period to March 2002. The data I have requested will allow us both to monitor revenue on an on-going basis and to ensure that those levels endorsed by the Minister are achieved.

Attached is a schedule summarising the data request and I would be pleased if this is completed for the year ending 31 March 2000 for each local authority area. The data provided should be reconciled to the figures that are included in your final accounts for 1999-2000. You will note that Rating Disabled Properties have to be reported on at their adjusted Council Tax Band. There is a further schedule relating to households that are metered, albeit there are few, and I would expect that this return would be able to be completed from data already held within your own database. I require both the returns to be made on a quarterly basis.

Please advise me as soon as possible of when you will be in a position to provide data for the year to 31 March 2000 and for the current year.

Please contact me if you need further clarification on the above information requirement.

Yours sincerely

WIC 4: HOUSEHOLD DATA REQUEST Counc	I Date Produced
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Water & Wastewater Reduction			Total Households Connected							sehold: er char			Households receiving Wastewater charge only				
Council Tax Benefit		No reduction	Single person 25% reduction	50% reduction	No charge	No reduction	Single person 25% reduction	50% reduction	No charge	No reduction	Single person 25% reduction	50% reduction	No charge	No reduction	Single person 25% reduction	50% reduction	No charge
		Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
	No Benefit																
Band A	Partial Benefit																
	Full Benefit																
	No Benefit																
Band B	Partial Benefit																
	Full Benefit																
	No Benefit																
Band C	Partial Benefit																
	Full Benefit																
5 5	No Benefit																
Band D	Partial Benefit																
	Full Benefit No Benefit																
Band E	Partial Benefit																
Danu L	Full Benefit																
	No Benefit																
Band F	Partial Benefit																
	Full Benefit																
	No Benefit																
Band G	Partial Benefit																
	Full Benefit																
	No Benefit																
Band H	Partial Benefit																
	Full Benefit																

WIC 4: HOUSEHOLD DATA REQUEST Council

Date Produced

			LOI		uncn							•	
Debt	199	6-97	199	7-98	199	8-99	1999-2000 Debt Outstanding 2000-01						
	Outstanding debt at 31/3/00 attributable to 1996-97	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1997-98	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1998-99	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1999-2000	Properties in Debt	Up to 30 days (attributable to billing year)	Between 30 and 60 days (attributable to billing year)	Between 60 & 120 days (attributable to billing year)	Between 120 & 180 days (attributable to billing year)	Above 180 days (attributable to billing year)
Council Tax Benefit	£	Nr	£	Nr	£	Nr	£	Nr	£	£	£	£	£
No Benefit													
Band A Partial Benefit													
Full Benefit													
No Benefit													
Band B Partial Benefit													
Full Benefit													
No Benefit													
Band C Partial Benefit													
Full Benefit													
No Benefit													
Band D Partial Benefit													
Full Benefit													
No Benefit													
Band E Partial Benefit													
Full Benefit													
No Benefit													
Band F Partial Benefit													
Full Benefit													
No Benefit													
Band G Partial Benefit													
Full Benefit													
No Benefit													
Band H Partial Benefit													
Full Benefit													

WIC 4: HOUSEHOLD DATA REQUEST

Date Produced

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Debt	199	6-97	199	7-98	199	8-99	1999	-2000	Debt C	utstand	ing 200	0-01	
	Outstanding debt at 31/3/00 attributable to 1996-97	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1997-98	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1998-99	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1999-2000	Properties in Debt	Up to 30 days (attributable to billing year)	Between 30 and 60 days (attributable to billing year)	Between 60 & 120 days (attributable to billing year)	Between 120 & 180 days (attributable to billing year)	Above 180 days (attributable to billing year)
Council Tax Benefit	£	Nr	£	Nr	£	Nr	£	Nr	£	£	£	£	£

21 June 2000

To Chief Executive of: East of Scotland Water Authority **North of Scotland Water Authority West of Scotland Water Authority**

WIC 5: CUSTOMER SERVICE PERFORMANCE REPORTING

This letter is to advise of my expected requirements for the monitoring of the provision of customer service in general and Guaranteed Minimum Standards in particular, by way of three reports discussed below. It will, of course, not be possible to define final monitoring requirements until the results of the current consultation exercise are available.

Ongoing independent measurement and monitoring of customer service provision is crucial in ensuring that customers receive a consistent and quality service, providing value for money. Customer service provision is equally critical in customer perception of the industry and so accountability must be demonstrable.

Performance reporting

Any reporting mechanism developed must gather fair, useful and relevant information. The purpose is to ensure that service is delivered to an acceptable and improving standard and to inform other areas of activity within this Office and, if required, initiatives launched by the Scottish Executive.

To facilitate this process a reporting format has been developed where the water authorities are required simply to complete a pro forma which will allow consistent measures and charts to be generated.

Glossary of definitions

A glossary of definitions to be used when completing these reports has been developed from the Ofwat definitions used in their June Return and information provided by all three Scottish water authorities. A copy of this glossary is attached for your information. All responses given should be based on these definitions. Should further clarification be required please contact this office.

Guaranteed Minimum Standards Performance Report

This report will be required guarterly. This report is intended to be a top-line summary of each water authority's performance against the Guaranteed Minimum Standards likely to be introduced following the current consultation process and Ministerial approval. Information provided should relate to these specific standards. Any water authority operating tighter or additional standards will have the opportunity to report on these elsewhere. Results will be considered in terms of the scale of improvements required and achieved.

Customer Service Performance Report

This report will also be required quarterly. The customer service performance report is a more detailed report intended to cover the major areas of customer service. This report will be used to monitor trends and highlight whether particular water authorities or their divisions are doing very well or badly in specific areas. This report monitors historical performance over five quarters to show trends, and comparisons with previous quarters and the same quarter in the previous year to account for seasonal influences. Again this allows scrutiny of improvement rather than absolute performance. Categories covered in this report are listed at Appendix 1 and are not materially different to those in the previously collected quarterly performance reports.

The format of this report also provides an opportunity for water authority comment in order that attention can be drawn to any particular influences on the performance achieved and any fluctuations observed.

The end of this report includes a section where the water authority should report information on incidents which were either notifiable or of particular interest. The last section provides an opportunity for the water authority to share the results of any surveys carried out and customer satisfaction established in the guarter eg postcard or callback surveys.

WIC Returns Performance Report

This report will be required annually. This is a more specialised report utilising the Ofwat 'June Return' framework. It may be that a number of the criteria will not apply in Scotland at this time however a nil response can also provide useful information. It may also allow a degree of preparation to be made for possible future measurement.

Further requests

This office may request further information to clarify and expand on the results from these reports.

Further analysis of trends over time and comparisons will be carried out using the information provided and it is therefore essential that the information provided is both complete and accurate.

Completion of these reports is not expected to be overly onerous given that much of the information is already collected, although I realise that issues such as time banding may require system development.

The frequency and content of these reports will be reviewed after three to four quarters to ensure that the required information is being collected in the most useful way. Input from the water authorities on these matters will also be welcomed to facilitate greater efficiency and effectiveness on both sides.

Reporting periods

In the time until 1 September 2000 I would be grateful if you could do as much as possible to gather the information as required by these new formats. However, I acknowledge the system development required and will accept Quarter 1 2000 and full three month Quarter 2 2000 reports in the previously utilised format.

Guaranteed Minimum Standards and Customer Service Performance Reports

1

Consultation

It is clear that in order to make appropriate system amendments the reporting requirements for customer service must be set as soon as possible. In view of this time pressure it is proposed that around two weeks would be sufficient for the water authorities to comment on the proposed reporting requirements and indicate any potential difficulties with implementation. I would therefore expect any views, comments or suggestions to be submitted by Friday 30 June 2000. Whilst it is not expected that the format will be changed significantly following this process, there may be issues of which I should be aware. I will, of course, advise of any amendments which occur.

XXXX will provide paper and on-disk copies of these reporting formats to XXXX in the next few days. XXXX will also be able to address any other questions in this regard.

Yours sincerely

Appendix 1

Categories included in the Customer Service Performance Report

- Contacts
- · Enquiry and Complaint handling
- Telephone handling
- Supply interruptions
- Septic tank emptying
- Sewer flooding
- Appointment keeping
- Ex-gratia payments
- Water authority Guaranteed Standards scheme
- Surveys
- Incidents

22 August 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 6: QUALITY PERFORMANCE ASSESSMENTS

This letter is to advise of my intention to introduce Quality Performance Assessments of written complaints received by the water authorities, a development of previous audit arrangements. Ongoing independent measurement and monitoring of customer service provision is crucial in ensuring that customers receive a consistent and quality service, providing value for money.

It is intended to introduce Quality Performance Assessments as an independent monitor of the service actually received by customers. At this stage these Assessments will be of written complaints and telephone complaints where a written response has been requested.

Any measurement and monitoring system must be fair and transparent. The veracity of the information gathered and conclusions drawn must be as far as possible unquestionable. With this in mind a pro forma and a set of definitions has been developed to ensure objectivity in assessment. This system will be more rigorous, and I believe more defensible, than the previous, more subjective measurements.

As I have stated, at this stage the Quality Performance Assessments will only cover written complaints and telephone complaints where a written response is requested. However, it is clear that with the majority of contacts being by telephone a mechanism must be introduced to ensure quality service is provided in this medium also. I am therefore keen that we work together to develop such a system, perhaps by way of independent monitoring by an outside agency of call handling. I am considering the issue of 'spot-check' Assessments and will come back to you on this when the methodology is more developed.

I am keen that these Quality Performance Assessments get underway as soon as possible and would propose the first round take place towards the end of September. I envisage that Assessments will take place quarterly, in line with Customer Service Performance Reporting. Having considered the number of complaints I am proposing that 40 cases be considered during each quarterly assessment.

This process will be reviewed after three to four quarters to ensure that the system is as useful as it can be. Input from the water authorities on these matters will also be welcomed to facilitate greater efficiency and effectiveness on both sides.

I would appreciate your views, comments or suggestions as soon as practicable as you will note from the attached timetable that we would be asking for complaint information on 11 September 2000. We would expect a list of all written complaints and telephone complaints where a written response was requested relating to the quarter, 1 April 2000 to 30 June 2000, on that date from which our random selection would be made.

I attach a pro forma, criteria definitions and draft timetable for your information. XXXX will forward copies of these formats to XXXX in the next few days. XXXX will also be able to address any questions you may have in this regard.

Yours sincerely

6 October 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 7: SCHEME OF CHARGES 2001-02 (1.0 – Request for submission of charging scheme, timetable and guidance)

I am writing to request your Scheme of Charges for next year. I see the Scheme of Charges as an integral part of the regulatory process and I have therefore requested the appropriate supporting data, drawing on previous requests contained in my letters WIC 1, WIC 4 and the Regulatory Annual Return. The appendices and the guidance notes attached detail the format of the supporting data to be submitted.

In order to assist with the preparation of the charges scheme, I have identified the following key policy issues, which I believe ought to be addressed:

- income levels and compliance with the Ministers' decision in January 2000
- consistency of charging methodology
- · re-balancing of household and non-household charges
- affordability

Income levels and compliance with the Ministers' decision in January 2000

In complying with Ministers' decision, I would expect to see a nominal charges cap of 12%. This was intended to generate an income level of [East: £280.6 million, North: £231.8 million, West: £367.3 million], as envisaged in the Strategic Review of Charges. If there is any movement from this figure then a full reconciliation of what has changed, and why, should be provided on an item by item basis. If revenue levels for 1999-2000 and 2000-01 will fall short of the level of income required by the Strategic Review, I would ask that you seek the view of the Scottish Executive, before submitting your Scheme of Charges.

I would expect any difference from the expected 12%, for any customer category, to be quantified and explained with supporting data. Any variance from the income agreed at the Strategic Review should be quantified and explained in the format of the tables attached.

Consistency of charging methodology

I have received a number of representations, which suggest that there would be great benefit to all stakeholders from consistency of charging methodology. I plan to consult on consistency of charging methodology in the next year and if, as expected, there were a requirement for water authorities to employ a consistent approach, Scotland wide, then I would welcome your views on how this could be achieved. As an interim step I would like to see full details of any consultation you may have carried out on this matter. Your views on consistency on the following areas would be appreciated:

- charging for surface water drainage
- charging for network and customer service
- · treatment of highway drainage
- use, or otherwise, of the year 2000 rateable values
- return to sewer policy
- agreement on the customer categories where charges are to apply, for example, charges for empty properties, halls of residence
- relief of charges
- · building water charges.

Re-balancing of household and non-household charges

I suggest that no further re-balancing be made until there is robust data on household and non-household revenue and costs. This would be collected on a consistent basis through the Asset Management and Information Project

and the submission of proper data through the WIC 1 and WIC 4 requests.

Affordability

Although the Scottish Executive will be consulting on the affordability of charges, I believe that authorities could do more, outwith the requirement for legislation, to improve the affordability and collection of charges levied on vulnerable households. I would be pleased to receive ideas as to how water charges can be made more affordable.

The following implementation issues need to be addressed, and I have given more detail below.

Metering and levels of metered charges

I would encourage all authorities to include the option for customers to have a water meter installed free of charge. Charging customers for the option of a measured supply in Scotland cannot be sustained when customers in England and Wales have a statutory right to opt for such a supply, free of charge. I would also encourage authorities to be more explicit about their metering policy. The cost of installing a meter may be covered by a change of tariff for the first few cubic metres.

Relief of charges

I am aware that you have consulted on the issue of relief of charges to churches, nursing and care homes etc. I look forward to receiving an analysis and the conclusions from that consultation before the end of October. I plan to obtain opinion on the matter through the use of the domestic consumer panel, which has been established to ascertain the views of households.

Level of income and impact of competitive deals

I am keen to restrict the influence of special agreements that are outwith the charging scheme in order to limit to an agreed level the impact that such agreements will have on the remaining customer base. I suggest that the aggregate cost of special agreements should not exceed 2.5% of authority turnover for 1999-2000. Any increase in special agreements beyond this should be advised to me with a full business case.

Rateable values as a basis for non-household unmeasured charges

I would like to see also a consistent approach across Scotland on the use of rateable values for calculating bills, including whether or not to use the year 2000 valuations. Where up to date values are used, please provide the necessary evidence and supporting calculations on the revised charge base. It may be that rateable value is going to become a decreasingly relevant means of charging and I would welcome your views.

Rebates for non-connection for surface water

Customers should not be charged for services that they do not receive. I therefore suggest that customers be offered a lower charge, or rebate, where the surface area of their property does not drain to the public sewer. I welcome your proposals (again preferably common across Scotland) on this issue.

Timetable

I would ask that you provide the proposed Scheme of Charges and the supporting documentation and commentary to me no later than Friday 15 December 2000. I would hope to reach agreement quickly thereafter. I would be happy, however, to discuss your proposals and the charging issues in more detail, before 15 December 2000.

I am copying this letter, plus the tables, appendices and guidance by e-mail to XXXX. Please contact me if you wish to discuss any of the points above.

Yours sincerely

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 8: DATES FOR SUBMISSION OF INFORMATION TO THE WIC

Subsequent to the recent meetings between yourselves and this office regarding the information project, I would like to clarify the timing and content of further information requirements of this office following on from the project. Please ensure that all the relevant staff are informed of dates that affect them. Accurate communication is important for the success of the data gathering exercise. We have had some experience of people being unaware of important deadlines despite having communicated them to you. I hope that the following information will be helpful:

- 10/11/00 QIR
- 15/12/00 Submission of information required for approval of the **schemes of charges**, including tables A1-4, E1&2, F1-10 from the return.
- 31/01/01 Submission of an updated version of the **1999-00 annual return** in the new format including any improvements, and an initial submission of any new information. Focus should be directed towards the new information in tables H-K and the key benchmarking parameters:
- · Population all definitions
- · Properties connected and billed
- Sewage treatment loads
- · Volumes put into supply
- 31/01/01 Action plans to overcome the gaps in what the authority is able to submit, including best
 estimates of any required resources and milestone dates.
- February 01 We will review the information provided in **tables H, J**, **and K** with a view to identify any important revisions to be done in March or April 2001.
- 01/04/00 Submission of table S, the strategic plan.
- 01/07/01 Full return for 00-01.

Provided that table K is fully completed by 01/07/00 this will replace the PIR.

Issuing of new versions of the return

As you are aware we will periodically be reissuing updated versions of the tables. It is assumed that the regulatory contact will have ownership and control of all copies of the tables throughout the authority and will recall these in order to issue new versions. It is extremely important that confusion cannot arise, and that consistency of the timing and content of revisions is maintained.

When a new version is issued, copies of our change control sheets will also be made available. These will contain lists of added or deleted lines or columns and other changes.

I trust that this system will ensure the effective communication of revisions.

Yours sincerely

20 December 2000

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 9: NON DOMESTIC DEBT ANALYSIS

In the WIC 1 request, I sought detailed revenue information on non-domestic customers. I stressed that the understanding of customers, and what income they generate for the business, is a core operation of the water authority.

I would now like to take this request a stage further by seeking an analysis of non-domestic customer levels of debt. I consider that this is an essential ingredient in developing your understanding of customers. In addition, given the material levels of non-domestic bad debt in recent years, this analysis would enable this office to monitor the financial impact of the debt levels and assess the efficiency of the authority's collection systems. The data requested will allow us both to monitor revenue on an on-going basis and to ensure that those levels endorsed by the Minister are achieved.

I envisage that this information will be submitted as additional columns to the WIC 1 request on a quarterly basis. Therefore, the debt levels across water, wastewater and trade effluent should be completed for individual customers where revenue is <£100,000 and by business sector for medium sized and small customers. The first submission should relate to the balances as at 31 March 2000 and 31 December 2000 and is required by 2 March 2001.

I have attached the column headings to be appended to the WIC 1 submission. These column headings are similar to both the WIC 4 return, which requires summary total information for households, and the non-domestic debt summary required for the annual Charges Review. Two additional columns have been added for Bad Debt Provision and Bad Debt Write-offs.

I appreciate that you will encounter difficulties in completing this information and in particular analysing that part of the debtor balance which relates to previous years, however I trust you will apply best endeavours.

If you have any queries regarding this request please do not hesitate to contact me.

Yours sincerely

WIC 9: NON-DOMESTIC DEBT REQUEST

Per WIC 1	1996-97	1997-98	1998-99	1999-00	Debt Out	standing 2	000-01				
Customer Name/ Business sector/ Banding	Outstanding debt at 31/3/00 attributable to 1996-97	Outstanding debt at 31/3/00 attributable to 1997-98	Outstanding debt at 31/3/00 attributable to 1998-99	Outstanding debt at 31/3/00 attributable to 1999-2000	Up to 30 days (attributable to billing period)	Between 30 and 60 days (attributable to billing period)	Between 60 & 120 days (attributable to billing period)	Between 120 & 180 days (attributable to billing period)	Above 180 days (attributable to billing period)	Bad Debt Provision 31/12/00	Bad Debt Write-offs (attributable to billing period)
Per WIC 1	£	£	£	£	£	£	£	£	£	£	£

28 February 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 10: INFORMATION PROJECT ACTION PLAN

Thank you for the recent submission of your proposed action plan, which I received on XX February, with further information on XX February 2001. I have undertaken an initial review of the action plan and am extremely disappointed with the quality of the actions included, despite the additional time given to complete this exercise. Moreover, Cap Gemini conducted an independent review of the action plan and reached similar conclusions re the inadequacy of the details provided.

The main weaknesses identified in the action plan are as follows:

- Lack of attention to strategic information shortcomings
- Failure to address high level information gaps
- · Asset management requirements inconsistently addressed
- · Milestones, cost and resource requirements have not been adequately defined
- Timescales to provide information are unrealistic
- No firm determination of overall goals and objectives

Specific examples of inadequate actions include:

- One plan failed to mention the development of a risk-based measure for monitoring WTW's and STW's asset performance, identified as a gap in Phase 2 Report
- Of the 52 plans submitted only 23 contained any milestone dates
- Two of the authorities' action plans re asset information go as far as developing 'methodologies' for reporting changes to asset stock. None of the plans appears to address the issue of actually maintaining up-to-date asset data.

The review of the authorities' existing data systems undertaken by Cap Gemini identified common information gaps across all three authorities and recommend a common approach to their solution. The findings of the NEW Project underline the need to address any information gaps in a collaborative fashion. This would suggest that a Scotlandwide approach to addressing these information requirements would be appropriate. In addition, the possibility of a single authority reinforces the need to tackle problems once and for all on a consistent basis and appears to make this task considerably more urgent than in the timetable proposed in the action plan.

The issue of knowledge of the asset base for essential services is very much to the fore in the public's eye. It is therefore essential to secure a sound and consistent information base for asset management. For this reason, I would suggest that a stand-alone project to facilitate and support asset information gathering be initiated. I envisage a Scotland-wide project operated by external experts with the following outputs:

- Defining a framework for detailed asset information which is fully consistent with the information project data framework and with effective day-to-day asset management
- I.T. Systems to support the information database
- Collecting all the required data to fully populate the database

The cost of this project could be between £8 million and £10 million. However, your organisation will benefit in terms of the quality of the information compiled by expert consultants and also in terms of resources freed up to concentrate on other areas of the action plan.

I would like to discuss this proposal and ways of taking it forward at the Steering Group meeting this Friday. If you have any questions, please do not hesitate to contact me or XXXX at the number below.

Yours sincerely

WIC 11 was not issued

7 March 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 12: NEW OPEX AND SPEND TO SAVE

At the meeting on 16 February, the three Chief Executives asked me to set out the criteria on which I would assess each authority's case for additional expenditure on new opex and 'Spend to Save' initiatives.

New opex

The efficiency target for base opex is calculated from benchmarking on companies' opex, as reported in 1998-99. Companies' benchmarked opex includes the full costs of operating new plant, or providing additional staff, to meet the reported level of service for that year. For the sewerage service, where levels of service are improving rapidly, the benchmarking takes account of the extra costs of specific treatment processes.

Given the nature of the benchmarking, it would, therefore, be inappropriate to allow your Authority new opex, unless the reported levels of service in England and Wales were surpassed, or significant additional sewage treatment processes were required.

From our discussions on the 16th February, it would appear that the only area likely to qualify for additional opex will be for sewage treatment and sludge disposal, in the period up to 2005-06. Commitments on drinking water compliance and Guaranteed Minimum Standards would appear unlikely to qualify, unless a step change were needed, over and above the reported levels of compliance and service standards in England and Wales in 1998-99.

The criteria I intend to adopt in assessing new opex are, therefore, as follows:

- Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?
- Is the authority required to provide this additional level of service, and for what reason?
- Has the authority carried out a proper assessment of the proposed new opex spend, rather than rely on contractors'/manufacturers' estimates or on an arbitrary percent of the capex cost?
- Has the authority demonstrated management challenge and control over the proposed costs?
- Has the authority compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?
- Do the alternative options include different mixes of opex and capex?
- · Where appropriate, have single authority solutions been investigated?
- Has the authority quantified potential savings to base opex arising from upgrading works or systems, and offset the new opex accordingly?

Proposals for new opex would need to have satisfactory responses to each of these questions to be acceptable.

Once accepted, the assessed amount of new opex would be subject to an efficiency target.

Spend to save

Spend to save covers those projects whose principal purpose is to reduce total whole life cost, as expressed by net present value. I expect each authority to determine and set out the appropriate financial criteria on which to judge the merits of individual projects, especially where they are competing for a limited budget resource. That said, I intend to judge proposals on the following criteria:

- Has the authority carried out a proper assessment of the proposed costs and benefits, rather than rely on contractors'/manufacturers' estimates or on arbitrary estimates?
- Has the authority demonstrated management challenge and control over the proposed costs?
- Has the authority compared alternative options on a whole life cost basis, within a project appraisal?
- · Have full net present value calculations been provided?

- Do the alternative options include different mixes of opex and capex?
- · Have payback periods been calculated, with sensitivity analyses to take risk into account?
- Where appropriate, have single authority solutions been considered?
- Has the source of funds to carry out the project been identified?
- Have additional 'knock-on' benefits (eg reduced risk of non-compliance) been quantified?

Proposals would need to have satisfactory responses to each of these questions to be acceptable. Those that are approved will need to identify appropriate outputs, deliverables and milestones, and I shall wish to monitor progress closely to ensure value for money.

Clearly, it is important to deal with both new opex and spend to save within the Quality and Standards process. I therefore expect to see these issues addressed in your Strategic Business Plan. I would also expect you to prepare detailed justifications for proposed expenditure in these categories by early May, so that I can review them before incorporation in the final Quality and Standards document.

Yours sincerely

7 May 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 13: EFFICIENCY ANALYSIS - IMPACT OF PPP SCHEMES

At the Strategic Review, I will need to identify future PPP costs, so that they can be properly allowed for in prices. However, it will undoubtedly be the case that, in the future, some PPP schemes will impact upon 1998-99 controllable OPEX. This could be the case, for example, where primary sewage treatment facilities existing in 1998-99 are replaced and extended through a PPP scheme. In addition, were assets transferred from the Authority to a PPP, then this could reduce the asset base on which maintenance by the Authority is required.

Given these possibilities, I need to understand the potential impact of PPP schemes in reducing controllable OPEX and CAPEX over the period to 2005-06. I envisage that the outcome of this exercise would be an efficiency target to be netted out of the expected spend on PPP. There may also be an impact on the capital efficiency targets, where it can be shown that the Authority's internal costs will be reduced through PPP schemes.

In the interests of customers, I also need to be confident that variable or volume related costs included in PPP contractual arrangements would, where appropriate, be optimised by the Authority to the extent that such costs can be controlled.

Please find enclosed three tables which will give me the information I require to gain a full understanding of the current and future PPP impact. Please complete this information by Thursday 31 May 2001.

Table A:

This table requires details of the number of the sewer network or other assets made redundant or transferred to the contractor as a consequence of PPP. This will give me an understanding of the number of assets and hence the associated costs of running and maintaining these assets no longer required due to PPP.

Table B:

This table requires details of how much OPEX relates to operating facilities that will be replaced by PPP schemes. I also need to know in what year each scheme becomes fully operational.

Table C

This table requires details of the ranges of volumetric/load parameters which the water authority's PPP charges will be based on. I also require details of the volumes/loads that the water authority currently generates within the area to be covered by PPP schemes. I have assumed that charges are influenced by the level of volume/loads used by the authority. If this is not the case, please indicate the basis of charging within the PPP schemes.

It is not currently my intention to include the PPP efficiency targets within the revenue caps proposed in my advice to Scottish Ministers. I believe that the operating cost and capital efficiency targets are appropriately and sufficiently demanding. This position assumes a capital efficiency target is set within the 30-40% range that has been indicated to you.

If you require any further clarification to this request, please do not hesitate to contact either XXXX or XXXX.

Yours sincerely

Table A: Total length of sewers and other assets to be made redundant or transferred to PPP schemes

PPP scheme Km/Nr	Large Diameter	Medium Diameter (>150<600mm)	Small Diameter	Other
	(>600mm)		(<=150mm)	
NSW				
Highland				
Tay				
Aberdeen				
Moray				
WSW				
Daldowie/ Shieldhall				
Dalmuir				
Meadowhead, Stevenson and Inverclyde				
ESW				
Almond Valley, Seafield and Esk Valley				
Levenmouth				

Table B: OPEX (1999-2000) relating to activities which are now or will be incorporated in PPP schemes

PPP scheme £'000	CSOs	Sewerage Network	Pumping Station	Treatment Plant	Other	Fully Operational Date
NSW						
Highland						
Tay						
Aberdeen						
Moray						
WSW						
Daldowie/ Shieldhall						
Dalmuir						
Meadowhead, Stevenson and Inverclyde						
ESW						
Almond Valley, Seafield and Esk Valley						
Levenmouth						

Table C: Volumetric/load parameters for PPP schemes

PPP scheme	Parameters range per contract	Current volume/load (1999-00)
NSW		
Highland		
Tay		
Aberdeen		
Moray		
WSW		
Daldowie/ Shieldhall		
Dalmuir		
Meadowhead, Stevenson and Inverclyde		
ESW		
Almond Valley, Seafield and Esk Valley		
Levenmouth		

18 May 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 14: SPECIAL AGREEMENTS FOR LARGE CUSTOMERS

I brought to your attention the need for transparency of Large User Tariffs during the 2001-02 Scheme of Charges consultation. The special agreements available for large users should, in my opinion, be published in your scheme of charges. It is important in terms of non-discrimination that all customer groups should have tariffs, which are available to all customers, communicated to them.

Further to this I would like to bring in measures, which will monitor the special agreements that are being created throughout the year and the financial impact they will have on future charging schemes.

Attached is a pro-forma table, which I require to be completed for the financial impact of the agreements, and a questionnaire to explain the other details of the special agreements entered into.

Please advise me as soon as possible of when you will be in a position to provide data for this request.

Please contact me if you need further clarification on the above information requirement.

Yours sincerely

WIC 14: SPECIAL AGREEMENTS FOR LARGE CUSTOMERS QUESTIONNAIRE

Customer
Business Sector
Sites covered
Period covered by deal from inception to close
Agreement procedure instigated at the request of
What other alternatives were available to both parties (please attach financial impact of other alternatives on separate attachment)
Conditions of deal
Preferential rates: - Please give any differences from standard scheme of charges
Free Use Conditions: - Please give details of any free volumes given

Please give any other details of differences from the standard scheme of charges and conditions. These should be included as attachments to this questionnaire.

Please note that wherever there is not enough space for full disclosure that an attachment must be given with the full details requested.

18 May 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 15: CAPITAL INVESTMENT & EFFICIENCIES

Following today's meetings with the Water Authorities I now summarise below the investment profiling after efficiencies, which I propose to incorporate in my Strategic Charges Review for the four years to 2005-06. The Capex amount available is [East: £459.8 million, North: £595.3 million, West: £697.8 million], before the addition of a Spend to Save allowance of [East: £65.9 million, North: £43.2 million, West: £95.5 million]. The same efficiency percentages of 34% by 2005-06 apply to each Authority, representing 26.6% across the currently profiled programme. The context and computation of these are set out in the Executive Summary of the Capital Efficiencies 2002-06 presentation, an electronic copy of which is appended. The figures are rounded and include inflation.

East	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	98.4	101.8	112.4	110.6	423.2
Allowable Capital Opex	8.8	8.9	9.6	9.4	36.7
	107.0	110.7	121.0	120.0	459.9

North	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	132.8	140.5	143.7	131.2	548.2
Allowable Capital Opex	11.5	12.2	12.3	11.1	47.1
	144.3	152.7	156.0	142.3	595.3

West	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	159.2	162.9	165.6	154.8	642.5
Allowable Capital Opex	13.8	14.2	14.2	13.1	55.3
	174.0	177.1	179.8	167.9	697.8

As you may know from today's meeting at Woodlands House attended by the Authorities and XXXX for the Integration Team there was a broad consensus on the methodology adopted and the minimum efficiencies required. You will note that Spend to Save amounts are provisionally indicated, being subject to further national consideration, and that these include IT. Regarding the introduction of a 'High Priority' allowance of £5m pa for each Authority for first-time connections I require a detailed justification from the Authority that £20m in four years can be invested for customer benefit, and achieved in the timescales envisaged.

I shall be obliged to receive your agreement by Monday 28 May to the net profiling before efficiencies, and the phasing of these efficiencies. If in order to plan and achieve the delivery of maximum efficiency compatible with meeting optimum outputs you consider that the annualised profiling should change please advise me at the same time.

XXXX and XXXX are available to assist your management team on any aspect arising from today's presentation.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Attachment: Electronic copy of 18 May presentation

28 May 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 16: DEVELOPMENT CONSTRAINTS AND RURAL SEWERAGE CONNECTIONS

As you will be aware, the Minister has indicated that he would like to be able to consider whether the central option in the Quality and Standards Paper should be marginally enhanced to cover high priority issues, particularly programmes to ease development constraints, and some extension of rural sewerage connections. In addition, the Authorities should put forward any other high priorities falling outwith these two categories.

I have attached a framework table for setting out the costs and outputs from these high priority issues, and I would request that you complete this and return to me by Friday 29 June 2001. This should allow sufficient time for you to liaise with SEPA in order to complete the column on the environmental impact of the proposed scheme. This analysis will enable a consistent assessment across the Authorities.

Please do not hesitate to contact XXXX or XXXX if you have any queries on this request.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Attachment: High Priorities Table for completion

TABLE 1: DEVELOPMENT CONSTRAINTS AND FIRST TIME SEWERAGE

No	Scheme/ Project Description	Category (A) Insert priority level	Category (B) Insert priority level	Category (C) Insert priority level	Cost Currently Included in Central (£000)	Cost Not Currently Included (£000)		Environmental Impact (narrative from SEPA)
1	E.g. Calderglen Community extension	-	Medium	-	0	1,000	50	e.g. Significant – current discharges causing contamination risk downstream
2								
etc								

Notes:

Scheme/Project Description:

A simple narrative of the proposed scheme is required here.

Category is defined as:

- (A) Programme to ease development constraint
- (B) Rural sewerage connections
- (C) Other high priority issue

Priority level should be assessed according to these guidelines:

High - significant interest and pressure from local council, local authority or community groups Medium - moderate interest and pressure from above bodies/groups Low - low interest and pressure from above bodies/groups

Cost currently included in central option:

The Authority should highlight here any spend relating to these categories which has already been included in its submission.

Cost not currently included:

The Authority should include the additional costs in this column.

Total cost per capita connected:

This will facilitate an assessment of the merits of the scheme.

Environmental Impact:

The Authority should liaise with SEPA in order to complete this column.

WIC letters

29 May 2001

To Chief Executive of: East of Scotland Water Authority **North of Scotland Water Authority West of Scotland Water Authority**

WIC 17: ANNUAL RETURN SUBMISSIONS - SIGN OFF FOR DATA **ACCURACY**

Good quality and reliable information is critical to the regulatory process and management of the authority. One of the signs of good quality information is that its accuracy is attested to by an authoritative source. You will remember that the annual return requires directors to sign off the data provided in each individual table. This ensures that directors remain accountable for the data submitted to my office.

In order to maintain the integrity of the return, I intend to discuss the data only with the author of the tables and those responsible for quality control. If you have any queries relating to this, please do not hesitate to contact me.

Yours sincerely

30 May 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 18: QUALITY AND STANDARDS FINAL OUTPUT

In order that I can formally sign-off on the Quality and Standards base line numbers as required by the Scottish Executive, I request that you complete the attached table.

You will note that the information required is at a project level. The detail required however is not in any way as onerous as the completion of Table K (Investment Plan), and should simply be a small sub-set of the data required for the completion of Table K.

Please note that whilst the 2002-06 expenditure total should equal [East: £514m, North: £719m, West: £984m], the figure stated in your Strategic Business Plan, I appreciate that the splits between infrastructure and non-infrastructure, and rural/non rural may in many cases be estimates only. I also realise that the definition of rural or non-rural is subjective, and ask that you apply a common sense approach. As part of the Quality and Standards process, we simply wish to give the Scottish Executive a rough indication of the amount of money to be spent on rural areas.

Please prioritise this piece of work over both the completion of Section K for the annual returns and over the work you are doing to agree the bottom line post efficiency numbers. If necessary, the Section K deadline can be extended a little to accommodate this request. I would ask that you submit the table to me on Friday 1 June 2001.

The completion of the tables will enable the Scottish Executive to roll forward the summary numbers reported in their Consultation Paper on Quality and Standards, and will provide me with the necessary assurance as to the make-up of these numbers.

Yours sincerely

Quality and Standards Sign Off Table

Reference	Project Title	2002-06 Expenditure £000	Investm Base ((%)	Growth	Water infra (%)	Non infra (%)	Wastewate Infra (%)	r Non infra (%)	Other %	Rural/ Non Rural %
(As per Table K)										
TOTAL										

1 June 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 19: INVESTMENT APPRAISAL PROJECT

I am writing to discuss your involvement in the next phase of the 'Investment Appraisal Project' that is currently being undertaken by Yorkshire Electricity and WS Atkins. This project has now progressed through its first stage.

The first stage of the project has been to document an investment appraisal process consistent with best practice, and to develop pre and post investment appraisal audit procedures. It is my intention to use these audits to judge the effectiveness of investment decision-making in each of the Authorities. The documentation and audit procedures are now complete and currently being independently validated by a leading academic and firm of financiers.

I have enclosed a copy of the investment appraisal documentation, as it is currently being validated, for your reference.

In line with the scope of the project I will shortly be ready to introduce the audit procedures and the investment appraisal process upon which they are based to each Authority.

This introduction will take the form of an audit carried out by Yorkshire Electricity and WS Atkins on each Authority to examine the investment appraisal processes currently used to construct capital investment plans. Each audit will take three days to carry out at your offices and will examine the spectrum of large and small capital projects. Yorkshire Electricity would like to run the three audits concurrently across the Authorities between the dates of the 3rd – 5th July 2001.

Yorkshire Electricity would like to choose their sample from the investment appraisals signed off in the last six months. Ahead of the audits we would ask that you submit to them a list of these appraisals, with the project values, by Wednesday 20th June. Prior to the audit, Yorkshire Electricity will inform you of the selection of schemes they have chosen to audit. Throughout the three-day audit, the audit team will need access to all documentation appertaining to the chosen schemes and to your key personnel who are involved in the investment decision-making processes.

It is then planned that we will follow up the completion of the audits with a two-day workshop with each Authority run by Yorkshire Electricity. The purpose of these workshops is: to describe in detail the investment appraisal process and the audit procedures going forward; to feedback the results of the audits carried out; and to work with the Water Authority teams to understand any major gaps and issues that exist between current processes and those of the recognised best practice approach. It is anticipated that these workshops will take place at a time convenient to your teams starting week commencing the 16th July.

The estimated total cost to each Authority of this work is £35,000 excluding VAT. The benefits to each Authority could be substantial. The contribution from my office will be around £50,000, as we agreed at the outset of the project. Yorkshire Electricity will directly invoice the Authority in due course.

I trust these arrangements meet with your satisfaction. I advise that Yorkshire Electricity will contact you shortly to follow-up on these plans.

Yours sincerely

6 June 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 20: REQUEST FOR DATA RELATING TO DEPOTS, LABORATORIES AND OFFICE BUILDINGS

In light of the proposed set up of Scottish Water, I would like to understand the current structure of depots, laboratories and office buildings within the authority. It is important for me to assess any possible impact of changes in this structure due to the inception of Scottish Water. I would expect that there may be some consolidation of these buildings under Scottish Water and would like to assess the OPEX impact of this for consideration as part of the Strategic Review.

I am interested in obtaining details of the number of depots, laboratories and office buildings each water authority owns or rents and the purpose of these buildings. In the context of this request, depots, laboratories and office buildings also include any parts of operational buildings used by employees for non-operational purposes. The type of data I would like to understand includes:

- Location
- · Number of employees who consider the building to be their main place of employment
- The main work activity which takes at the buildings
- · For depots, the number of customers served
- Market value of the building, or annual rental, as appropriate
- Average OPEX incurred as a result of operating the building

In order to simplify the information, it may be appropriate to group depots by activity. In this instance, please indicate the number of depots grouped together. I would be grateful if you could submit this data in the format detailed in Appendix 1 by Friday 29th June 2001. If you have any questions relating to this information request, please do not hesitate to contact XXXX at my office.

Yours sincerely

	Owned by water authority						Rented by water authority					
	Location	Nr employees		Market value	Avg. OPEX	Location	Nr employees		Annual Rent	Avg. OPEX		
Depot 1												
Depot 2												
Laboratory 1												
Laboratory 2												
Office Building 1												
Office Building 2												

29 June 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 21: CRITICAL INFORMATION FOR STRATEGIC REVIEW

As you will appreciate, time is beginning to press in the preparation of the Strategic Review. I would like to take this opportunity to thank you for your teams' efforts to date in the completion of the June Return and other WIC data requests. However, in order to carry out the comprehensive data analysis required for the forthcoming strategic review of charges, I still urgently require the following critical information to be received by my office no later than Friday 13th July 2001. Please understand that this date does not include any allowance for slippage on our part and we really must receive the data requested on or before that date.

WIC 1

I would like to reiterate that the WIC 1 request must be completed to the exact specifications set out by this office. I must stress that every heading is essential to the analysis of the information provided and as such omissions would limit the value of the analysis undertaken.

Understanding the supply/retail business will require me to look at the balance between fixed and variable elements of customer charges. I will therefore require the following additional information:

Customers >£100,000

Numbers of meters and their sizes used by each customer.

For example:

Customer A	# of Meters	Meter Size
	3	25mm
	1	40mm

Customers <£100,000

Number of meters and their sizes by revenue bandings within business sectors.

For example:

Business Sector	Revenue banding	# of meters	Meter size
Petrochemicals	>£50k<£100k	20	25mm
		15	40mm
		5	80mm

Inter authority trading

Please provide details of all income and expenditure arising from inter authority trading, broken down in to bulk water revenues/costs and all other revenues/costs. This is to enable me to produce consolidated financials for Scotland.

Value chain analysis - retail

I need to understand the relative costs of the retail component of your business. This is particularly important in the

context of potential entry of competitors. We have to be able to make a reasoned assessment of potential revenue loss from competition. This requires detailed information on the costs of billing, customer call centres, meter reading and debt recovery, etc. If there are any other costs, which you believe it appropriate to allocate to the retail business, please detail these and the rationale for their allocation to that business. I attach spreadsheet templates for completion.

Capital investment

A section of the forthcoming Review will be dedicated to the outlook for the 2006-10 Strategic Review period. I understand that there are a number of uncertainties around capital investment requirements during this period. However, please submit your current estimates for each year between 2006-2010, split between water/sewerage and infrastructure/non-infrastructure. It would be helpful if you could also highlight and quantify the main sensitivities around this data. For the avoidance of doubt, can this information please be supplied in year 2000 prices and at today's level of procurement and asset management efficiency.

Finally, can I emphasise the importance to the Strategic Review of Charges that this office receives complete responses to all WIC letters. This particularly refers to WIC 20, which governs the potential for asset disposals/rationalisation, and to my letter on new business. Accordingly, please ensure that all outstanding information requests have been dealt with in full by the above date. It is essential that these submissions be received within the given timescale, to ensure that the Strategic Review can effectively reflect the true circumstances of the Water Authority. The information must be complete and accurate in order that the guidance provided to the Minister is based on a full up-to-date appraisal of the Water Authorities' position.

I appreciate that there is a short turn-round on this information, but would be most grateful for your continued assistance.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

PS A more detailed definition of each parameter requested will be forwarded to you on Monday.

19 October 2001

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 22: CUSTOMER REVENUE INFORMATION AND DATA REQUEST

In order to consider charges schemes for your authority for the next financial year I will require a complete response to my WIC 1 request both for the last financial year and for the six months to the 30th September 2001.

In addition to the information requested in WIC 1, I will also require information on numbers of meters, sizes of metres and any special arrangements. I have attached a format for this information.

For your convenience I attach a copy of my original WIC 1 letter.

If you require any further clarification on the information requirements, please contact XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Encs

Example WIC 1/22 return

Customers reference	Prop Desc Section	Location	No of Sites	Meter Count	Meter Sizes		Mw Cons Actual (m³)	% of Total Non- domestic Volume	Actual	Mw Std Chrg Actual (£)	Uw Actual (£)	Total Water Bill (£)	% of Total Non- domestic water revenue

Total Annual Charge £	Mw Cons Accrual	Mw Accrual	Mw Std Chrg Accrual	Uw Accrual	Total Water Accrual £	Ms Cons Accrual	Ms Accrual	Swd Accrual	Us Accrual	Total Waste Water Accrual £	Total Accrual £	Special Agre gross discount (£)

% of Total water revenu	Actual m³	% of Total Non- domestic ww Volume	Ms Actual (£)	SWD Ner RV (£)	Swd Actual (£)	Us Net Rv (£)	Us Actual (£)	Total Sewage Bill £	Trade Effluent Volume (m³)	Trade Effluent Load	Trade Effluent Strength	Trade Effluent Total (£)	% of Non- domestic sewage revenue	% of Total sewage revenue

Total Bill Actual & Accrual	Mw Forecast	Mw Std Chrg Forecast	Forecast	Total Water Forecast £	Ms Cons Forecast	Ms Forecast	Swd Forecast	Us Forecast	Total Waste Water Forecast £	£	Reduction Due To User High Tariffs

21 November 2001

To Chief Executive of: East of Scotland Water Authority **North of Scotland Water Authority West of Scotland Water Authority**

WIC 23: Monitoring of Capital Investment Programmes for 2002-06 **Quality and Standards**

As you will be aware, Ross Finnie has accepted my advice on revenue caps in the Strategic Review of Charges. The revenue caps are developed from a series of inputs, primary among which are the requirements of the Quality and Standards Programme for 2002-06. I would like to draw your attention to the assumed post-efficiency profile of capital investment for each Authority contained in the Review:

£m

		2002-03	2003-04	2004-05	2005-06 Total	Review
ESWA	Assets	88.3	93.8	80.7	77.1	339.9
	IRE	24.7	21.3	35.0	40.0	121.0
	Total	113.0	115.1	115.7	117.1	460.9
NOSWA	Assets	123.8	96.1	121.8	93.1	434.8
	IRE	34.5	32.6	47.3	49.3	163.7
	Total	158.3	128.7	169.1	142.4	598.5
WOSWA	Assets	139.2	141.4	157.4	144.6	582.6
	IRE	25.1	26.0	58.4	58.9	168.4
	Total	164.3	167.4	215.8	203.5	751.0
'Scottish	Assets	351.3	331.3	359.9	314.8	1357.3
Water'	IRE	84.3	79.9	140.7	148.2	453.1
	Total	435.6	411.2	500.6	463.0	1,810.4

I recognise that the primary concern of the management of the three authorities or the proposed Scottish Water has to be to live within their respective revenue caps. Equally, however, it is critical that the outputs agreed as a result of the Quality and Standards process are achieved on time and within the revenue cap.

I attach the detailed list of investment projects provided by each of the three authorities in the Quality and Standards process, together with a one page summary reconciliation to the Annual Return tables and to my Review. My expectation is that the expected outputs of these projects will be met within the agreed revenue cap. I will therefore look to monitor the progress towards delivery of the capital projects with reference to this list of projects. Obviously, it would be helpful if detailed changes to the capital investment plan could be detailed to us pro-actively, but the quarterly updates during the period and each new Annual Return should signal any material change to these plans. My Office will look at all variances and discuss these with the Quality regulators.

One of the further recommendations of my Review was that a joint project between my office, SEPA and the proposed Drinking Water Quality Regulator be implemented to ensure that consistent output measures are collected and monitored. Upon completion of this project (which I would expect to include significant input from the water authorities), I would anticipate that the current financial monitoring of the investment programme would switch to focus primarily on the delivery of outputs. I hope that terms of reference for this project will have been drafted by the end of January 2002.

In the interim, I would like to reiterate my definition of an "efficiency". My expectation is that the outputs of the 'Quality and Standards' programme will be delivered more cheaply, either through better programme management, better procurement or the use of innovative solutions.

There are other means by which the capital investment programme could be reduced, which would not be acceptable. These would include:

- Deferment of a project, which has been included in the Quality and Standards investment programme, even if
 a new derogation has been negotiated (in this instance, no further funding will be allocated in future revenue
 caps to allow for completion of a deferred scheme).
- The "do nothing" option, where this is taken to cut costs without reference to outputs or business objectives.

I am concerned by some comments from capital investment managers in each of the authorities that deferment of projects is viewed as the key to meeting my efficiency targets. This is not consistent with my frequent definitions of efficiency in the Review and the clear statement that the majority of the target can be met by closing the gap in procurement efficiency with England and Wales.

I look forward to the next submission of the Capital Investment Return. This is due on 1 February 2002. I would be grateful if you could also forward under separate cover any changes to the agreed Quality and Standards list of projects, of which you are currently aware, by this date.

Thank you for your assistance.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 24: Asset Maintenance – Leakage

Leakage takes a high profile role in the regulatory environment in England and Wales, where Ofwat and the companies work together to reduce leakage to an economically sustainable level. I appreciate that in some areas significant progress is beginning to be made as a result of the agreed Action Plans to collate asset information. However, these plans have not included leakage. There are two reasons why I believe that I will begin to need to understand in some detail leakage from water mains and service reservoirs in Scotland. I now believe the industry in Scotland should be in a position to begin to address the issue of leakage.

The monitoring of capital outputs will require me to be confident that leakage will be reduced considerably. For example, the Katrine/Balmore development will require there to be a significant reduction in leakage if the needs of the city of Glasgow are to be met. Leakage will also impinge upon unit supply costs and the rationale for special agreements with larger customers. It is also likely that the proposed Water Services Bill will establish a licensing regime that will require me to ensure that the incumbent water services provider(s) give(s) fair terms to a new entrant. I will only be able robustly to assess a network access price with a sound understanding of leakage levels, built up over a proper and realistic timescale. In order to begin this process, I would ask that you submit your current leakage strategy, by Friday 22nd February 2002. This strategy should include any current measures (and their cost) to address leakage.

I would anticipate that your leakage strategy should include the following factors:

- **Economic level of leakage** the strategy should reference and be consistent with the Authority's action plans to install meters, assess night-time demand for industrial users and assess domestic consumption. It is likely that different levels of leakage are right and proper in different areas, but this will need to be empirically justifiable.
- **Metering of source output** an assessment of leakage levels will require the Authority to establish not only where losses are occurring but also how much water is being produced. It is clear from the WIC Return submissions for this year that considerable effort is required to understand the levels of water production and loss at all stages of the value chain.
- Competition there could be major implications if the Authorities or Scottish Water do not have robust data
 around leakage issues in general, as it would be difficult for them to have a defensible, fair access price to the
 network.
- **Technology** the cost-effectiveness of the technology employed, firstly for the detection of leakage and subsequently for the remedial work, should be assessed.
- Capital programme leakage in the network has clear implications on the sizing of water treatment works and other assets in the capital programme.
- **Cost transparency** it was a consistent theme in my Review that the industry in Scotland has to identify the costs of activities to increase the levels of efficiency and to ensure broadly cost-reflective pricing. Leakage has an obvious impact on the split between fixed and variable costs in running the network.
- Water Framework Directive the assessment of leakage will have an important input into the River Management Plans in Scotland.

I look forward to receiving your strategy by 22 February 2002. In the meantime, if you have any queries please contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 25: Monthly Submission of Resource Accounting and Budgeting (RAB) Tables

It is certainly encouraging to note the quality of recent appointments to the Board of the proposed Scottish Water. My expectation is that this will lead to a more efficient and more effective level of service to customers. This does not, however, remove the need for robust regulation, as Scottish Water will remain a monopoly across most of the value chain for the foreseeable future.

There are four principal differences that will require a different type and periodicity of monitoring in Scotland in comparison to England and Wales. These are:

- the level of incentives to Executive and non-Executive Directors: while these are much stronger than in the
 current authority structure, they are neither as attractive nor are the sanctions as serious, when compared to
 the private sector and the criminal sanctions of the Companies Act.
- the lack of a comparator at a similar stage of development: while good comparators exist to assess the scope for potential improvement, there is no way to analyse through comparative benchmarking whether progress at an organisational level is "reasonable".
- the relatively poor quality of data: the more frequently a data set is produced, which is internally consistent and consistent with previous data submissions, the sooner that data is likely to be fit for purpose. I recognise that no data set is ever perfect, and my interest is only in the most material variances.
- the absence of a system of independent Reporters: the system of Reporters, as you know, has benefited both
 the regulated companies and the regulator in England and Wales. It is, however, expensive and is required
 because of an understandable increase in the level of gaming in a private sector context. More regular reporting
 will lead to greater confidence and trust, without the need for third party audits.

I therefore regard monthly financial monitoring as entirely appropriate, given the anticipated large benefits that should accrue to customers if Spend to Save is used wisely, and, particularly, given the pace of cost reduction required. Indeed, the targets for merger and operating cost efficiency will require underlying base operating costs to be reduced at an average rate of around 2% per month during 2002-03 and 2003-04. It would not be possible to track progress trends adequately on a quarterly or annual basis.

For the past seven months, the water authorities have submitted financial RAB tables to the Executive. These tables have been forwarded to my office to allow me to monitor the financial position of the authorities throughout the year. As you will appreciate, it is critical to the regulatory process that the information received by my office through the RAB tables is of good quality. The information currently received from the monthly RAB returns is in some cases incomplete and of poor quality. This makes it difficult for me to carry out my monitoring role.

As you will understand, there is a need to extend the current RAB tables to report base operating costs, Spend to Save, depreciation and RAB tracking totals. I recognise that you will need flexibility to run the business within the formal revenue caps, but clearly we are entering a period of major change, and I will need to have visibility on key trends and movements in operating costs. I attach copies of the required tables.

I have discussed this issue in detail with XXXX at the Scottish Executive. As a result, I have reduced my original scope and now propose to ask for some elements of these tables only on quarterly as opposed to monthly basis. I can assure you that I am requesting the minimum information required to perform my statutory functions. In view of the likely scrutiny and importance of this information, it would be appropriate that directors sign off each table before submission.

I appreciate that the revised RAB tables may appear more complicated, but I believe that the information required is entirely consistent with business needs, and therefore that it will not impose any real additional burden on water authority staff. My purpose in collecting this information is to monitor trends in base cost reduction and to report

periodically on those trends. I would emphasise that there is no intention to interfere with the management of the business or the workings of the Board. I would therefore not propose to discuss the implications of each month's figures after their presentation. My intentions would be to discuss progress quarterly unless there was a major cause for concern.

In order to give you adequate time to prepare for the additional information requirement, I propose that the first revised tables, covering period 12, 2001-02 and period 1, 2002-03, be submitted by 22 May 2002. Thereafter, I would need the returns within 15 working days of the close of each accounting period, as follows:

Monthly:

L1 : Summary information

L2: Income and expenditure

L3: Balance sheet

L4 : Changes in working capital

L5: Cash flow

L6: Reconciliation of operating surplus to net cash flow

L7: Summary analysis of fixed assets

L11: Income analysis - water

L12 : Income analysis – waste water L15 (part) : Analysis of operating costs L16 : Audit trail of revisions to forecasts

Quarterly:

L8 : Analysis of above ground fixed asset cost and depreciation

L9: Analysis of infrastructure asset cost and depreciation

L10: Analysis of total assets

L13: Cost of capital

L15 (part): Analysis of exceptional items and asset disposals

At start of year:

L14: Budget forecasts

Clearly, it may become necessary to modify the RAB tables in the future, given the current uncertainties around the status of resource accounting going forward, and the possible impact of any requirements for accounting separation.

Once again I would like to assure you that every effort has been made to keep this information requirement to the minimum consistent with effective regulation. I intend to review the frequency of the return in the light of future progress against efficiency targets, and in improved accuracy of the information provided.

XXXX has suggested that it would be appropriate to meet to discuss these requirements with you and XXXX. I believe XXXX will arrange an appropriate date.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX

15 January 2002

To XXXX, Scottish Water Integration Team

WIC 26: Revised Action Plans:

Thank you for your letter dated 20 December 2001, where you explain the work being undertaken by the Scottish Water Transition Team to progress action plans.

I appreciate that the merger to form Scottish Water has implications for action plans. I agree that it may be more appropriate to take forward some actions on a Scotland-wide basis. However, it is critical that work continues on taking actions forward quickly and that the transition to Scottish Water does not slow this process down.

I am pleased that you recognise in your letter the importance of progressing these action plans on an urgent basis. It is essential for me, as regulator, to be confident that actions are progressing at an expedient rate to ensure that quality data is available to inform decisions on a timely basis. For example, adequate asset returns and risk assessments need to be made by summer 2003 to form the basis of the next Quality and Standards Report.

From your letter, I am encouraged to see that an initiative is underway to revise action plans on the basis of business critical data categories. It is important that this new action plan covers all the main issues detailed in my original letter of the 2 April 2001, including the areas identified as needing 'urgent improvement'. I would also expect that this new action plan would be prepared on a best practice basis. To date, I have not received any revised submission of action plans, excluding updates on short-term actions, which improve the quality of the original submissions which were received in February 2002.

I appreciate your offer to organise a meeting to discuss the work currently being undertaken by the transition team. However, I feel that this meeting would be more beneficial if we were able to discuss the revised action plans in detail. To this end, I would be grateful if you could submit a current status report and revised copy of the action plans to my office by 1 February 2002.

If you have any questions, please do not hesitate to contact XXXX at my office. I look forward to hearing from you soon.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX WIC letters

8 February 2002

To Chief Executive of: East of Scotland Water Authority North of Scotland Water Authority West of Scotland Water Authority

WIC 27: Dates for submission of information to the WIC

The purpose of this letter is to outline the process to be followed for the submission of the 2001-02 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead.

I am sure that you understand the importance of accurate and clear communication to the success of the collation, and monitoring, of regulatory information. It is therefore vital that all the relevant water authority staff are informed of those dates which apply to them. Unfortunately, in the past, some deadlines have been missed and it is important that we ensure proper and timely submissions of all regulatory information. I will regard late or (unexplained) incomplete returns as an indication of a problem and that further regulatory scrutiny is required.

Annual Return

The procedure for the submission of the WIC Annual Return will be much the same as last year, except that I will expect a fourth consolidated submission from Scottish Water. The Annual Return format will be distributed to each authority and Scottish Water in early April, with completed Returns and Commentaries due on 16 June 2002. The template will include the following elements:

- Sets of tables in Excel spreadsheet format, for data capture.
- · Detailed, up-dated guidance and definitions to assist completion of the tables.
- · Separate guidance to Scottish Water covering those tables where consolidated data is required.
- Copies of change controls identifying changes carried out between 2000-01 and 2001-02 Return.

Please note that the following tables will not be required for submission:

- Tables E3 (PFI), E5 (Large water treatment works) and E9 (Large sewage treatment works) will not be required
 in the Scottish Water submission.
- Tables G7 and G8.
- Section K: Investment Plan (all tables).
- Section S: Strategic Business Plan will be required for Scottish Water only.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance, but are your opportunity to draw my attention to any other issues, which you feel that I should take into account.

I would also draw your attention to the importance of providing data in the correct format (e.g. using the appropriate combination of upper and lower case letters for codes in section G, as defined in the Definitions). Last year, many tables could not be uploaded into the database due to incorrect formatting, which we and Cap Gemini had to correct. This exercise was quite expensive and was a direct result of a lack of due care and attention. This year, we intend to ask for resubmissions where data does not follow the prescribed format given in the definitions. The costs of any failed uploads will be separately billed to you. Meetings are planned to take place in February to discuss this issue further, and XXXX will be contacting XXXX shortly to arrange this.

It remains a basic requirement that the tables be signed off to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Charges Scheme

I will expect your draft Charges Scheme submission on 15 November 2002, together with full WIC 1, WIC 4 and WIC 9 analysis (see below).

WIC Letter Information Requests

CUSTOMER SERVICE AND REVENUE:

- WIC 1/22 Revenue from Non-Domestic Customers due on 15 May and 15 November 2002.
- WIC 4 Domestic Revenue due on 15 May and 15 November 2002.
- WIC 9 Non-Domestic Debt Analysis due on 15 May and 15 November 2002.
- WIC 5 Customer Service Performance Reports due:
 - Q3 Friday 15 February 2002
 - Q4 Friday 10 May 2002
 - Q1 Friday 9 August 2002
 - Q2 Friday 8 November 2002
 - Q3 Friday 14 February 2003
 - Q4 Friday 9 May 2003
- WIC 6 Written QPA Written complaints and telephone complaints where a written response is requested (provisional dates).

WA provide list		Advised of selection	QPA
Q3	28/01/02	4/02/02	20/02/02
Q4	29/04/02	6/05/02	22/05/02
Q1	29/07/02	5/08/02	20/08/02
Q2	28/10/02	4/11/02	20/11/02
Q3	27/01/03	3/02/03	19/02/03
Q4	28/04/03	5/05/03	21/05/03

 Specialised QPA - Written complaints and telephone complaints where a written response is requested (provisional dates), will be carried out on the following dates. I will advise you of the subject of the audit 3 weeks prior to the date in the first column below.

WA	provide list	Advised of selection	QPA
Q3	11/02/02	15/02/02	6/03/02
Q4	13/02/02	17/05/02	5/06/02
Q1	12/08/02	19/08/02	4/09/02
Q2	28/10/02	17/11/02	4/12/02
Q3	10/02/03	17/02/03	5/03/03
Q4	22/05/03	19/05/03	4/06/03

 Telephone QPA (assesses 'current' position rather than retrospective analysis of other QPA). Any change in the format will be advised in due course.

QPA

Q4	27/03/02
Q1	19/06/02
Q2	18/09/02
Q3	11/12/02
Q4	19/03/03
Q1	18/06/03

CAPITAL INVESTMENT:

• WIC 23 Monitoring of Capital Investment Programmes for 2002-06 Quality and Standards. Changes and reconciliation to agreed Q & S list of projects and their phasing due on 15 February 2002 (previously 1 February). The agreed Q & S broken down as follows:

Per Q&S Publication August 2001				4 Years
	North	East	West	TOTAL
Water	£m	£m	£m	£m
Distribution infrastructure	180	130	150	460
Treatment assets	170	112	318	600
	350	242	468	1060
Wastewater				
Distribution infrastructure	118	138	184	440
Treatment assets	190	68	252	510
	308	206	436	950
				*
Miscellaneous support assets	134	66	80	280
WA own Spend to Save				0
Additional new development				
and first time rural sewerage	18	16	16	50
TOTAL	810	530	1000	2340
* includes slippage, site servicing				

This compares with the table K totals:

	Per Ar	nual Return	Tables K	4 Years
	North	East	West	TOTAL
Water	£m	£m	£m	£m
Distribution infrastructure	141	91	155	387
Treatment assets	216	42	319	577
	357	133	474	964
Wastewater				
Distribution infrastructure	72	152	67	291
Treatment assets	241	163	392	796
	313	315	459	1087
Miscellaneous support assets	84	28	24	136
WA own Spend to Save	38	38	27	103
Additional new development				
and first time rural sewerage	18	16	16	50
TOTAL	810	530	1000	2340

This clearly suggests some very material changes in the programme which need, as a matter of urgency, to be explained. Additionally, the detail of projects within ESWA is not sufficient and needs disaggregation. The attached example from NoSWA would be appropriate.

- WIC 24 Leakage Strategy due on 22 February 2002.
- Capital Investment Appraisal Audits due in September/ October 2002.
- Capital Investment Return (4th quarter) due on 10 May and subsequent returns due one month after the quarter end.
- Named Projects Completed in 2001-02 due on 10 May 2002.

COSTS AND PERFORMANCE:

I have also requested the following information from Scottish Water:

• WIC 25 Monthly Submission of Resource Accounting and Budgeting (RAB Tables) – due on 22 May, and then 15 working days after the end of each accounting period thereafter.

• WIC 26 Revised Action Plans – Completion of top down plans and identification of Scotland-wide initiatives: due 1 May, with an up-date on 1 November 2002.

These requests are essential to effective and transparent regulation. I am still waiting for confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX

2 April 2002

To Chief Executive of Scottish Water

WIC 28: Procedure for Information Returns between the WIC Office and Scottish Water

I found our recent discussion of the management of information flow between Scottish Water and my Office to be very constructive. I believe that it is important to ensure that the day-to-day information requests are accurate and timely. This will avoid unnecessary tensions on either side. It is also important that there are clear channels of communication so that more strategic or ad hoc issues can be dealt with effectively. At our meeting, I outlined the new organisational structure of my Office and I am pleased to attach an organisational structure with contact telephone numbers. Please feel free to address specific strategic or ad hoc issues to me and/or to the responsible Director. As you know, XXXX and XXXX are currently leading our efforts in the investment and revenue areas.

With regard to day-to-day information requests, I have set up an e-mail address for the receipt of regulatory information from Scottish Water. This address is monitoring@watercommissioner.co.uk. This mirrors the regulation mailbox, which was established by East of Scotland Water. I confirm that this Office will not use any Scottish Water management or regulatory information, which has not been sent via Regulation@Scottishwater.co.uk to the 'monitoring' address. I would also confirm that any further correspondence on the status of any return should only be communicated via this same routing. I would also request that hard copies of all cover letters sent to the 'monitoring' address be forwarded to this Office in the mail.

In order to ensure that the information supplied to this Office is as robust as circumstances allow, I have asked the Monitoring team to accept information only with appropriate sign-off from the responsible Director. In a hard copy this would be clear from a signature, in an electronic format, it should be clear from the routing of the e-mail that the data has passed through the mail box of the responsible Director.

I would also like to take this opportunity to confirm the sign off which I believe to be appropriate for the information requests, which I outlined in my WIC 27 letter. These are as follows:

CURRENT INFORMATION REQUESTS

Annual Return

Requirements: Completed returns and commentaries.

Submission Date: 17 June 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Draft Charges Scheme

Requirements: Draft Charges Scheme together with full WIC 1, WIC 4 and WIC 9.

Submission Date: 15 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Customer Revenue and Debt

Requirements: Completed returns for WIC 1 (Revenue from Non-domestic Customers), WIC 4 (Domestic Revenue)

and WIC 9 (Non-domestic Debt Analysis).

Submission Date: 15 May 2002 and 15 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC23: Monitoring of Capital Investment Programme

Requirements: Submissions were due on 15 February 2002. To date, full information has been received from NSW and WSW. Discussions are ongoing to establish a way forward for the submission of this data by ESW.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 24: Asset Maintenance – Leakage Strategy

Requirements: The original submission date for this return was 22 February 2002 which was missed. The

information is still required and the revised deadline is noted below.

Submission Date: 19 April 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Capital Investment Appraisal Audits

Submission Date: September/ October 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Capital Investment Return (4th Quarter)

Submission Date: Due 10 May 2002 and subsequent returns due one month after guarter end.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Named Projects Completed in 2001-02

Submission Date: 10 May 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 25: Resource Accounting and Budgeting

Requirements: First submission should cover RAB Tables for Period 12, 2001-02 and Period 1, 2002-03.

Subsequent submissions should be made for each period.

Submission Date: First return due on 22 May 2002 and then 15 working days after period end for each subsequent

submission thereafter.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 26: Revised Action Plans

Requirements: Completion of top down plans and identification of Scotland-wide initiatives.

Submission Date: 1 May 2002 and 1 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

I hope that you find the above information useful. If you have any comments on either the outline of the process for the information flows between our offices or on the submissions due, please do not hesitate to contact me. I look forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Appendix 10

12 April 2002

WIC letters

To Chief Executive of Scottish Water

WIC 29: Annual Return Submissions

This letter is my formal request for Annual Return information. In WIC 27 I set out a timetable for information requirements, including the Annual Return. As indicated in that letter, today I am issuing the Guidance Notes and table templates for the 2002 WIC Annual Return. The procedure for the submission of the Annual Return will be the same as that outlined in WIC 27. The main points to note are attached (Annex 1).

I trust that the Returns will build on the improvements seen in last year's final Return, both in terms of the completeness and quality of the information supplied. I would however, like to take this opportunity to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance given in the Definitions and in accordance with the prescribed formats. This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible. I should also warn you that, as stated in WIC 27, any costs incurred arising from incorrectly formatted data would have to be separately billed.

The Annual Return tables should be signed off by the relevant Director. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the monitoring team at the WIC office by the 17 June 2002.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Annex 1

The Return will consist of:

- Sets of Excel tables.
- Definitions.
- Separate guidance to Scottish Water covering those tables where consolidated data is required.
- Copies of the Change controls carried out between 2000-01 and 2001-02 Return.

Tables that will <u>not</u> be required for submission:

ESWA, NOSWA and WOSWA	Scottish Water
G7 and G8	E3, E5 and E9
K1, K2, K3, K4 and K5	G7 and G8
S1, S2, S3, S4, S5, S6 and S7	K1, K2, K3, K4 and K5

Changes to the Annual Return tables.

Change control numbers V5065, V5066, V5067, V5068 and V5069 are material, and comprise:

- Additional columns in Section G to record project expenditure prior to report year.
- Additional column inserted into the output measures block in G5 and G6, to record percentage output.
- New quality codes QW1 and QW2.
- New output code EC8, how it affects Section G.
- New output code EC8, how it affects Section C.

The Annual Returns are to be submitted by 17 June 2002.

4 October 2002

To Chief Executive of Scottish Water WIC 30: ACCOUNTING SEPARATION

As part of the *Strategic Review of Charges*, I set out my initial thoughts on the necessity of implementing an accounting separation of certain elements of Scottish Water's business. The Minister accepted my recommendation regarding accounting separation and recently I have held meetings with your staff to discuss my initial thoughts on this issue. I am taking this opportunity to inform you that I am minded to consult on the issue of accounting separation in the second half of November 2002.

Non-core business

You will already be aware that my statutory duty has been revised such that I am now bound to promote the interests of core customers. In the *Strategic Review of Charges*, I made clear that I am not against Scottish Water pursuing commercial opportunities, however, I would be concerned if this impinged upon the risks borne by customers of the core business.

The water and sewerage companies in England and Wales are already required to produce separate Regulatory Accounts for the appointed business. I believe that it would be beneficial for both customers and Scottish Water to produce such accounts for the core business in Scotland. In the longer term, this may actually improve the relative performance of Scottish Water in its core activities. I am also keen to ensure that our benchmarking is conducted on a totally like for like basis and such accounting separation would increase the comparability of the reported financial statements.

Retail/non-retail activities

Given the possible development of a framework for competition in Scotland and given the requirements placed on Scottish Water by the Competition Act (1998), I intend to require Scottish Water to separate the retail cost elements of the business from the non-retail elements. I am aware that Scottish Water is working hard to gain a thorough understanding of its costs and I believe that such transparency in the costs of the different elements of the value chain would be beneficial to customers and ultimately to Scottish Water. Scottish Water is likely, if it has not already been asked, to receive requests for a wholesale price. Only a clearly defined separation of retail activities would be likely to withstand the likely independent scrutiny.

Initial thoughts

I attach some initial thoughts on the possible elements that constitute core, non-core, retail and non-retail activities. I would stress that these are preliminary and would welcome your views. These views will inform my drafting of the consultation.

I look forward to hearing from you.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

Accounting Separation – Preliminary Ideas

	Retail	Non-retail
Core	Retail Retail contract management & systems Customer information systems Customer account management (key account management) Customer meter reading Customer billing Customer revenue collection Customer debt collection Customer debt write-off GMS appropriate to billing, complaints etc. Metering Disconnection notification	 Abstraction, treatment, storage, conveyance & distribution of potable water Conveyance, treatment & disposal of sewage including public septic tanks Quality control Call centre for interruptions, quality problems, flooding Customer information systems GMS appropriate to interruptions, flooding, and infrastructure etc. Supply pipe repair Supply installation Physical disconnection Communication/education of flush/don't flush, reservoir safety
Non-core	 Added value services – insurance, bottled water etc. Private septic tank emptying Communication/education – customer satisfaction e.g. water conservation, septic tank care Tailored service consultancy Grey water New connections General engineering consultancy Laboratory services Special Agreements 	

WIC letters

17 March 2003

To Chief Executive of Scottish Water

WIC 31: Dates for submission of information to the WIC 2003-04

The purpose of this letter is to outline the process to be followed for the submission of the 2002-03 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead. During the year, I will also begin preparing for the next Strategic Charges Review, and will write to you separately regarding the timetable for key stages in that process.

As with last year, I am sure that you understand the importance of accurate and clear communication to the success of the collation, and monitoring, of regulatory information. It is therefore vital that all staff are informed of those dates which apply to them. Last year some deadlines were still missed and it is important that we ensure proper and timely submissions of all regulatory information. I will again regard late or (unexplained) incomplete returns as an indication of a problem and that further regulatory scrutiny is required.

Annual Return

The procedure for the submission of the WIC Annual Return will be much the same as previous years, however this year I will expect only a submission for the merged entity of Scottish Water. The Annual Return format will be distributed in early April, with completed Returns and Commentaries due on 16 June 2003. The template will include the following elements:

- · Sets of tables in Excel spreadsheet format, for data capture.
- Detailed, up-dated guidance and definitions to assist completion of the tables.
- Copies of change controls identifying changes carried out between 2001-02 and 2002-03 Return.
- Template for Commentary document.

Please note that Section K: Investment Plan tables will not be issued or required for submission this year.

I would like to reassure you that there will be very few material changes to the layout or content of the Annual Return Tables.

I continue to draw your attention to the importance of providing data in the correct format. I am pleased to report that there was a marked improvement in the format of the data submitted last year thereby allowing a smoother upload process into the database. I am keen that this progress continues and look forward to a similar standard being submitted this year. Where data is not in the prescribed format and fails to upload, we will, as with last year, ask for resubmissions with the costs of any failed uploads being billed separately to you.

It remains a basic requirement that the tables be signed off to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. With regards to the supporting Commentary document, I require the content and quality of this to be of a high standard. As I state in our 2001-02 Costs and Performance Report, the information contained in the Commentary "is fundamental to ensuring proper, fair and objective comparisons can be made". I therefore need year on year changes in data to be explained and, where appropriate, justified. I also need to know what material assumptions and adjustments have been made to derive reported numbers. I would expect at least as much relevant detail as that provided by West of Scotland Water Authority in their 2002 Annual Return. To help facilitate this, I have included a standard format for the Commentary document, which should aid completion. This standard template will be sent out to you along with the Annual Return tables.

Charges Scheme (WIC 7)

Following the 2002 submission process, we tentatively agreed to review the process for future submissions. We will aim to agree a process over the next few months.

WIC Letter & Team Information Requests

REVENUE & TARIFFS:

 WIC 1/9/14/22 Revenue from Non-Domestic Customers/Non-Domestic Debt/Special Agreements for Large Customers – due on 02 May and 07 November 2003.

• WIC 4 Domestic Revenue - due on 16 May and 14 November 2003.

The above are all requested in Excel spreadsheet format.

COMPETITION & CUSTOMER SERVICES:

• WIC 5 Customer Service Performance Excel based Reports due:

Qtr	Due Date
Q4	09/05/03
Q1	08/08/03
Q2	07/11/03
Q3	13/02/04
Q4	07/05/04

• **WIC 6** Written Quality Performance Assessments (QPA) – Written complaints and telephone complaints where a written response is requested.

The following are a set of provisional dates and XXXX will be in touch with your staff to discuss the WIC 6 data request further.

Qtr	WA provide Excel list	WA advised of selection	QPA
Q4	28/04/03	05/05/03	23/05/03
Q1	28/07/03	04/08/03	22/08/03
Q2	27/10/03	03/11/03	21/11/03
Q3	26/01/04	02/02/04	20/02/04
Q4	26/04/04	03/05/04	21/05/03

Specialised QPA – Written complaints and telephone complaints where a written response is requested, will be
carried out on the following provisional dates. We will confirm the audit and advise you of the subject of the
audit 3 weeks prior to the provisional date in the first column below.

Qtr	WA provide Excel list	WA advised of selection	QPA
Q4	12/05/03	19/05/03	06/06/03
Q1	11/08/03	18/08/03	05/09/03
Q2	27/10/03	17/11/03	05/12/03
Q3	09/02/04	16/02/04	05/03/04
Q4	17/05/04	24/05/04	04/06/04

 Telephone QPA (assesses 'current' position rather than retrospective analysis of other QPA). Any change in the format will be advised in due course.

Qtr	Due Date
Q4	28/03/03
Q1	20/06/03
Q2	19/09/03
Q3	12/12/03
Q4	19/03/04
Q1	18/06/04

INVESTMENT & ASSET MANAGEMENT:

- Ongoing joint work to establish Q&S 2 baseline (WIC 18), in Excel format.
- Reconciliation of Base-Line to Current SW Capital Investment Plan (WIC23), Excel based format with estimated completion by 30 May 2003.
- Updated Leakage Strategy (WIC 24) Word document, requested for 31 December 2003.
- Capital Investment Appraisal Audits, in Access database format due in April 2003 and the Investment Team will contact Scottish Water in the near future to finalise a programme.
- Capital Investment Return, Excel and Word based documents due one month after each quarter end.

COSTS AND PERFORMANCE:

- WIC 25 Monthly Submission of Resource Accounting and Budgeting (RAB Excel Tables & Word document) –
 due 20 working days after the end of each accounting period.
- WIC 26 Revised Action Plans Completion of top down plans and identification of Scotland-wide initiatives in Word format: due 31 March 2003 (deferred from the original submission date of 30 November 2002).

All of the above requests are essential to effective and transparent regulation and I await confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

11 February 2003

To Chief Executive of Scottish Water WIC 32 – Delivery of Quality & Standards 1

As you will know, my office is currently working with your staff to establish the projects that comprise the original Quality and Standards II programme. In completing this work, as you have highlighted, it is important to understand those Q&S I projects that were not completed prior to the creation of Scottish Water. I would therefore be grateful if you could provide me with the following information:

- The projects associated with Q&S 1 which are underway but have not yet completed, showing the spend to date and remaining spend forecast.
- Projects which are identified as required under the Q&S 1 investment programme but have not yet commenced, including forecast spend.

Less urgently, it would also be useful to receive:

• The projects which have been delivered to date under the Q&S 1 programme, including the capital spend on these projects over the Q&S 1 period.

Obviously we are all working to tight timescales and I would be grateful for the above information at the earliest opportunity. I share your view that significant change is required in the management of the delivery of capital projects and I am keen to ensure that your efforts are not unduly delayed.

Yours sincerely

ALAN D A SUTHERLAND Water Industry Commissioner

11 April 2003

To Chief Executive of Scottish Water

WIC 33: Annual Return 2002-03 Submission

This letter is my formal request for Annual Return information. In WIC 31 I set out a timetable for information requirements, including the Annual Return. As indicated in that letter, today I am issuing the Guidance Notes and table templates for the 2003 WIC Annual Return. The procedure for the submission of the Annual Return will be the same as that outlined in WIC 31.

I would like to take this opportunity to again emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance given in the Definitions and fully in accordance with the prescribed formats. Please ensure that no changes are made that have not been agreed with me in writing in advance.

This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible. All Commentary documents especially should be as complete, accurate, relevant and authoritative as possible. I also stated in WIC 31 that there would be a template provided this year for the Commentary document; however, it is unlikely that this will be available at this time and as such the format of the Commentary documents should be completed as previous years.

I understand that Scottish Water has requested two copies of the Excel spreadsheet Annual Return tables, one password protected and one not. I am happy to supply this provided that only the password-protected tables are submitted back to WIC. Any tables submitted not in the prescribed protected format will be returned to Scottish Water and resubmissions requested.

I understand that Scottish Water has also requested version numbers to be inserted on the tables and definitions and again I am happy to include this to aid completion.

The Annual Return tables must be signed off by the relevant Director and any unsigned tables will be returned. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the Monitoring team at WIC. I can confirm that a submission date of 20 June 2003 following sign off by the Regulatory Management Group at Scottish Water is acceptable.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

1 April 2003

To Chief Executive of Scottish Water

WIC 34: Strategic Business Plan Submission – Table T1: Detailed Income and Expenditure Projections 2003-04 to 2005-06

In order to focus our discussion regarding the prospects for Scottish Water for the remainder of the regulatory period, I would be grateful if you could complete the attached Excel table and return it to me by Monday 7 April 2003

The format of the above request is similar in style to the Annual Return and RAB tables and to aid completion I have also included a set of definitions.

I would like to take this opportunity to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the table and Commentary documents. These must be completed in line with the guidance given in the Definitions and in accordance with the prescribed formats. This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible.

If you have any query regarding the above then please do not hesitate to contact XXXX on XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

WIC 35: Not used

28 August 2003

WIC letters

To Chief Executive of Scottish Water

WIC 36: Communication and progress monitoring

The purpose of this letter is to suggest a framework for meetings between this office and Scottish Water to deal with regulatory issues, and to propose arrangements to allow greater clarity and predictability in progress monitoring, particularly on operating expenditure.

Regulatory dialogue

Whilst we and Scottish Water are continuing to deal effectively with regulatory matters, I feel that it would be beneficial to both parties to put in place a more formal framework for dialogue and review. I believe that this would help avoid surprises on either side, and would reassure the Scottish Executive that issues are being addressed and resolved on an ongoing basis.

My suggestions would be as follows:

- 1. Quarterly meetings between the Chief Executive and the Water Industry Commissioner, to identify issues to be resolved, to ensure open dialogue on these issues, and to signal changes (for example in accounting policy or capital outputs) likely to affect progress monitoring.
- 2. Meetings approximately every six weeks at a senior working level, generally between directors, to cover in detail and report progress on issues identified under 1.
- 3. Presentation by the Water Industry Commissioner to the Board of Scottish Water approximately every six months, to review progress towards regulatory targets by Scottish Water.
- 4. Minutes to be taken and agreed at all meetings under 1. and 2., and copied to the Water Services Unit of the Scottish Executive.

Progress monitoring

I believe that we share a common view that clarity and predictability of Scottish Water's progress towards efficiency targets is vital, especially given the expected sustained pace and scale of progress. In view of this, I wish to propose arrangements that should improve the effectiveness and clarity of progress monitoring. The main elements of my proposal are:

- 1. Scottish Water would use the RAB Returns to report changes in accounting standards, policy, or practice that affect reported cost allocations, and their impact on reported numbers.
- 2. We would work with Scottish Water to ensure that the RAB Returns collect all the necessary information to calculate underlying costs on a like for like basis (for example new opex, appropriate core and non-core breakdown, etc).
- 3. We would work with Scottish Water and the Scottish Executive to ensure that the RAB Return definitions are consistent with or can be reconciled with the Statutory Accounts.
- 4. We would determine adjustments to reported costs in the current financial year, to bring them into line with accounting standards, policies and practices prevailing in 2000-01, the base year for the Strategic Review of Charges.
- 5. We would feed back to Scottish Water and the Scottish Executive updates of our regulatory adjustments at regular meetings (as outlined earlier in this letter), so that our assumptions and calculations can be understood and, if necessary, challenged.
- 6. We would provide the Board of Scottish Water with a six-monthly assessment of progress against regulatory targets, taking account of these calculations.

7. We would ask the Auditor General for Scotland to audit the process behind our regulatory adjustments and their communication to Scottish Water.

- 8. We would ask a Reporter to give an opinion on the information provided by Scottish Water regarding the allocation of operating expenditure and impact of accounting changes.
- 9. The adjustments would be noted in Scottish Water's Annual Report and Accounts and in our annual Costs and Performance Report.

My purpose in suggesting these arrangements is to ensure that regulatory comment is fair and that Scottish Water and the Scottish Executive have the means to track the Authority's progress as viewed by the regulator. This should allow Scottish Water to plan improvements in operating efficiency with greater confidence, and provide customers with an objective and accurate view of performance.

I am aware that regulatory adjustments to current year (and ultimately audited) costs may give rise to misgivings on the part of Scottish Water, and therefore I believe it very important to set out the logic for making them. The starting point for analyses of progress by Scottish Water on operating expenditure is the Strategic Review of Charges 2002-06. The targets set out in the Review are based on fair like for like benchmarking of costs with companies in England and Wales, having first verified that accounting treatments were comparable, or where necessary, that cost allocations could be aligned for comparison purposes. In the Annual Return for Scottish Water, I have adopted the Ofwat cost breakdown and definitions. This has ensured a high degree of consistency with England and Wales.

In continuing to compare performance with England and Wales, and in tracking progress by Scottish Water year on year, I need to exclude as far as practicable material influences that are not part of the underlying economic picture but are artificial effects brought about by changes in the way costs are accounted for. The principle of assessing the underlying economics has been a cornerstone of financial analysis for over 60 years. It was introduced by Graham and Dodd, who are regarded by financial analysts as having written the founding and seminal work for their profession¹.

The same principle is vital to effective and fair regulation, where targets are set based on economic principles, and inevitably without the benefit of future knowledge on the regulator's part of changes in accounting treatment, non-recurring costs, etc. The adjustment of reported accounting numbers for consistency with regulatory assumptions is accepted practice. For example, Ofwat makes adjustments to operating expenditure every year and publishes them. It asks Reporters to provide an opinion on companies' requests for adjustments, and these opinions are also published. The published adjustments are not necessarily those requested by the company. At price reviews, there is a fuller analysis to take account of changes in accounting policy over time, and differences between companies' policies.

It is important to note that Ofwat's adjustments are in the context of regulatory accounting issues that are considerably simpler as regards operating expenditure than those in Scotland. For example, core business is ring fenced, there are no PPP schemes, bad debt is low, capitalisation policies are reasonably stable and customers are not funding spend to save initiatives.

In the case of the electricity industry, Ofgem requires all licensed companies to obtain its approval before changing an accounting policy used in the preparation of regulatory accounts. Further, Ofgem adjusts the results of the statutory accounts of licensed companies to the basis used in the price review². This is the approach recommended by Deloitte and Touche in their review of regulatory accounting guidelines for the electricity distribution industry. They stated "The need to reconcile data back to the price control must be a key driver in the relationship between Ofgem's RAGs and the output from distribution businesses"³.

- 1 Graham and Dodd's Security Analysis, first published in 1934. The 5th edition, 1988, which contains no revisions of principles (p xi) lays out seven steps for analysts dealing with income statements. The first is (p 156) "1. Deal properly with non-recurring items. The analyst must eliminate nonrecurring items from a single year analysis, but include them in most long term analyses." It discusses examples of non-recurring items and states (p 157) "Another non-recurring item is the cumulative effect of an accounting change or a change in an estimate." In dealing with non-recurring items, it says that analysts should ask (p 159) "What pattern of spreading the gain or loss best describes the economics of the situation? ... The analyst must remember that the pattern of gains or losses that was recorded all in one period is the least appropriate one, because it is almost certainly the wrong pattern."
- ² See for example Ofgem The National Grid Company plc Regulatory Accounting Guidelines, August 2002, paragraphs 2.8 and 2.9. It lists 12 adjustments, including capitalisation. Similar guidelines exist for distribution companies.
- 3 Deloitte & Touche Regulatory Accounting Guidelines Report to Ofgem, March 2001.

The Office of the Rail Regulator specifies that regulatory financial statements "shall be prepared such that, insofar as reasonably practicable, ...the definition of items in primary statements; the valuation of assets and liabilities; the treatment of income and expenditure as capital or revenue; adjustments in respect of the provision, utilisation, depreciation and amortisation of assets and liabilities; and any other relevant accounting policies shall be consistent with...the Determination Assumptions for the corresponding period".

In excluding artificial effects, it would in theory be possible (although not accepted regulatory practice) to take the current year as the baseline for comparison. This would have the advantage of building in current accounting standards and treatments, and of consistency with the latest audited accounts. There are three reasons why this option is not practicable other than over the very short term. First, it would require access to historic account details in order to assess what the impact of say, 2003-04 accounting policy would be on each of 2000-01, 2001-02 and 2002-03 detailed cost allocations. I do not think it likely that Scottish Water would have such information. Second, benchmarking the current year's costs with companies in England and Wales could well require adjustments to their reported costs to align them with Scottish Water. Thirdly, it would inevitably be necessary for me to adjust and restate the targets set out in the Strategic Review of Charges every year, which I believe would lead to confusion for all stakeholders. I am therefore left with the alternative option of determining regulatory adjustments for the latest or current year.

In making adjustments to costs reported in the audited accounts, I am in no way questioning either the veracity of the accounts nor their compliance with standard accounting treatments and with UK GAAP accounting standards. Scottish Water is best placed to determine how it should represent its business. Indeed, it is entirely to be expected that a newly merged entity undergoing fundamental change would need to reappraise its accounting policies.

It is vital that Scottish Water should be able to track and forecast its performance as measured from a regulatory perspective. It is in the interests of customers for the Board and senior management of Scottish Water to monitor not only the progress of the business as viewed through management and statutory accounts, but also the underlying economic picture as viewed by the regulator. This should include forecast costs. In December 2002 I offered to provide the Board of Scottish Water with a six-monthly update on progress against regulatory targets, but the offer was not taken up. I now feel that this offer should be widened, to enable senior managers and the Scottish Executive to have access to the detail behind my adjustments on an ongoing basis.

Currently, the key material areas likely to be subject to review would appear to include the following:

- New accounting standards not in force in 2000-01
- Changes in accounting policy by Scottish Water, relative to 2000-01
- · Consolidation effects on costs arising from the merger (mainly inter-authority bulk supply costs)
- Accounting treatment and allocation of Spend to Save
- Accounting for bad debt
- · Differentiation of provisions and spend against provisions
- Treatment and allocation to PPP relative to 2000-01 forecast costs
- Identification and separation of core and non-core activities, costs and revenues
- Capitalisation of employment costs, materials and other costs
- Net new operating expenditure arising from growth, compliance and enhanced levels of service
- Identification and treatment of non-recurring costs

In examining these areas, I would apply the following principles, which were originally discussed with Scottish Water in May 2002 and were published in the Costs and Performance Report in February 2003:

- Do forecast outturns of all components show consistency with the reported year to date figures and trends?
- Can movements in the provision for bad debt be fully explained (since a reduction in the provision could artificially reduce costs)?
- Is new operating expenditure consistent with measures taken to improve service, and additions/enhancements to the authorities' operational assets?
- Are PPP costs correctly allocated, and within the limits agreed in the Strategic Review?
- Is the declared level of own work capitalised consistent with changes in the amount of capital investment?
- Is Spend to Save expenditure within the limits set by the Scottish Executive, and properly justified?
- · Are accounting items, exceptionals and non-recurring costs correctly allocated and explained?
- Do any changes in the allocation of core and non-core business costs affect the interpretation of trends in base operating cost?
- Do any other relevant changes in accounting policy affect the interpretation of trends in base operating cost?
- ⁴ Office of the Rail Regulator, Regulatory Accounting Guidelines, July 2003, para 1.7.

In the event that a reported cost component appears to be inconsistent or anomalous according to these principles, it may be necessary to adjust the calculation of base operating expenditure, unless the item can be justified.

In reporting my conclusions on the pace and scale of efficiency improvements by Scottish Water, I will need to take into account overall performance. There are five critical factors that have an impact on customers' interests:

1. Are levels of service improving in line with expectations?

Efficiency improvements require levels of service to remain stable or improve, while reducing costs.

2. Are investment plan outputs being delivered, sustainably, to time and within budget?

Future progress on efficiency is likely to depend on investment outputs being achieved.

3. Is depreciation being charged at a sustainable level, taking prudent account of asset lives?

Underprovision for depreciation could jeopardise the sustainability of Scottish Water.

4. Are other cost movements (new business, asset disposals, new debt, interest payments) in line with expectations?

A shortfall against expectations could offset financially some of the gains achieved in efficiency.

5. Is Scottish Water on track to narrow the efficiency gap with companies in England and Wales?

The more the gap is narrowed, the better the value for money for customers.

The monitoring of efficiency improvements by Scottish Water will therefore be assessed in the light of these five critical factors. From a regulatory standpoint, conclusions of analyses will recognise that underperformance in one area may well be compensated by overperformance in another.

Way forward

I believe that the proposals contained in this letter build on the ten principles that were endorsed by the Minister for Environment and Rural Development and agreed by Scottish Water and the Water Industry Commissioner. I would welcome your suggestions as to how they might be strengthened. Subject to your agreement, I would propose that our first meeting under these arrangements should take place in early September.

I am copying this letter to the Water Services Unit.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

30 September 2003

To Chief Executive of Scottish Water

WIC 37: Data for Serviceability Model

As part of my preparations for the next Strategic Review, I am seeking to establish the extent to which data currently exists to populate a capital maintenance serviceability model. This will also assist with the work of workpackage 2 (assets) in Quality & Standards III.

I attach a summary of the serviceability indicators currently used by OFWAT. More detail on these items is available, if required, in the OFWAT document Maintaining serviceability to customers: an update on seviceability indicators and measures (30 April 2002). For each of the items listed can you add columns to indicate both the current and historical availability of the data items. We also wish to know whether this data is available on a regional basis.

As you will know, the principle of serviceability modelling is predicated on the availability of long term trend data.

I would ask that you provide information on the availability of this data by 10 October 2003. I would further ask that you provide the available data itself by 10 November 2003.

Please contact me if you require clarification on the information required.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

22 October 2003

To Chief Executive of Scottish Water

WIC 38: Publication of Annual Return and Investment Programme Information

I have received a number of requests in recent months for the publication of annual return information. As you will know, OFWAT publish this information for companies in England and Wales and this is now firmly established as a customer and stakeholder expectation.

To date, I have considered the Scottish annual return information to be insufficiently robust to allow publication. However, on reviewing the June 2003 dataset, I am now content that the customer benefits of publication outweigh any risks associated with data quality.

I therefore propose to make this year's annual return data available as of 1st December 2003. This would include all data tables and commentary, including Scottish Water's Overview.

The published information will also include the "Table G" list of investment projects. This is consistent with your recent announcement that Scottish Water can provide Q&S II investment project information to customers and I welcome this increased level of clarity of investment output. It will be important to ensure that the information published is as accurate as possible and consistent with the recent "WIC 18" work. We may therefore need to discuss whether a revised Table G submission is required prior to publication.

I also propose to publish, with suitable caveats, the investment programme as an appendix to the next Investment and Asset Management report which is due early next year.

I would welcome your comments on this proposal.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, WSU, Scottish Executive

22 October 2003

WIC letters

To Chief Executive of Scottish Water

WIC 39: Finalisation of the Q&S II Capital Investment Programme

With regard to the ongoing work associated with the Q&S II capital investment plan and the development of the WIC 18 list, it would appear helpful at this point to review progress and agree the key steps moving forward.

Progress update

Version 2.0 of WIC 18 was issued on the 23rd of September 2003. The latest version includes the agreed reallocation of IT expenditure.

The red quality projects (£47M) have been reviewed and agreed by the quality regulators. The environmental and drinking water quality "parking lot" projects are being evaluated and prioritised by the appropriate regulator. It is expected that substitution project proposals in these areas will come forward before the end of the year.

The project categories included in the WIC 16 "high priority" funding (£50M) have been agreed with the stakeholders and specific projects are currently being identified, prioritised and costed. It is expected that substitution proposals in this category will be ready by the end of November.

The "north slippage" (£11.5M) programme line has been disaggregated and an initial list is available. Further work is currently underway by Scottish Water to provide additional information for WIC. It is expected that the defined set of project outputs associated with this investment will be available by end November.

The "Spend to Save" programme lines (£103M) have not yet been reallocated to project outputs. Under the agreed "ten principles", access to borrowing will be restricted if clear project outputs for this funding are not agreed. Scottish Water should now bring forward a set of proposed project outputs associated with this investment for review.

The definition of the capital maintenance elements of the programme has been significantly increased but relatively high "unallocated" expenditure, which is identified by investment category but not project output, remain. Work has to continue to reduce these unallocated elements.

A broad methodology for project substitution has been agreed. The associated mechanisms for approval of substitutions, involving equivalence of cost and project output, are under consideration by Scottish Water and WIC. These mechanisms require to be agreed before the substitution of the "red" quality projects can be completed.

Next steps

I am sure you will agree that it is essential that we maintain progress towards a resolution of the remaining items as quickly as possible. With this in mind, I list below my assessment of the key steps for moving forward.

- 1. Finalisation of the mechanisms for substitution. To provide consistency of approach and the appropriate degree of engineering knowledge, I intend to use the services of the proposed Reporter to verify the cost equivalence of substitutions, prior to granting my approval. For your information, the criteria the Reporter will be asked to examine will include, but not be restricted to:
 - a) The equivalence of risk and serviceability
 - b) Whether appropriate engineering solutions are being employed
 - c) Does the proposed solution comprise best practice
 - d) Whether costs are being properly derived

I expect to appoint a Reporter early in the New Year. For the initial tranche of substitutions associated with the Quality programme I estimate that a period of 8 weeks will be required for the Reporter to carry out the necessary assessment. It should therefore be possible to complete the Quality substitutions by the 31st of March 2004 provided I receive the proposed substitutions before Christmas.

2. A date needs to be established at which the remaining "unallocated" elements of the Capital Maintenance elements of the programme are fixed and any further changes are subject to the substitution mechanism. I will therefore expect, by the 31st of January 2004, a full list of Capital Maintenance project outputs, including any necessary residual unallocated elements which have not been assigned to project outputs. Movements beyond that

time will then be subject to the substitution mechanism, specifically including transfers from the unallocated elements into defined project outputs.

3. The other outstanding items in the definition of the programme are WIC 16, "north slippage" and, particularly, the "spend to save" items. We are in agreement that these need to be resolved as soon as possible if customer interests are to be protected and in line with the recent agreement on the restriction of borrowing for undefined outputs in the "ten point principles".

With regard to the "Spend to Save" item, in line with the agreed way forward I would ask that you now provide me with a list of project outputs associated with this expenditure for our review. For your information, I see it as essential that this matter is resolved by 31st March 2004, prior to the commencement of the final two years of the Q&S II programme. If a resolution is not reached by that date then the borrowing restriction agreed in the ten point principles will apply.

To maintain momentum with this process we have agreed a series of meetings going forward. To ensure clarity of process and efficient use of staff time, it is essential that we pre-define clear objectives and deliverables for these meetings. I would ask that these meeting dates, objectives, deliverables and milestones are agreed at the next meeting of the WIC 18 stakeholder group planned for early November.

I would welcome your comments on these proposals for moving forward but I am of the view that they represent the minimum acceptable timescales and most efficient process for final resolution of the Q & S II investment programme.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive XXXX, SEPA XXXX, DWQR

12 December 2003

To Chief Executive of Scottish Water WIC 40: Strategic Review of Charges 2006

Please find below a draft timeline for the next Strategic Review of Charges commencing in 2006.

We will seek to diarise with you three monthly update meetings where we can advise you on the progress of the Review process. In addition, we would be happy to update the Scottish Water Board on a six monthly basis or more frequently as required.

Draft timeline

ORIGINATOR	DOCUMENT	PURPOSE	DATE
1. Ministers	SRC Timeline	Announcement	Jan/Feb 2004
2. WIC	Annual Return 2004	Data request	April 2004
3. WCCP/WIC	Principles of Charging	Draft consultation	April 2004
4. WCCP/WIC	Principles of Charging	Publication of consultation	May 2004
5. WCCP/WIC	Principles of Charging	Consultation period	May 2004 - Sep 2004
6. SW	Annual Return 2004	Data Submission	June 2004
7. WIC	Methodology	Publication of consultation	July 2004
8. WIC	Methodology	Consultation period	July 2004 - Sep 2004
9. Scottish Executive	Q&S III	Final reports from work packages	July 2004 (beginning)
10. Scottish Executive	Q & S III	Publication of Consultation	July 2004
11. Scottish Executive	Q&S III	Consultation period	July 2004 - Sep 2004
12. SW	SW Strategic Business Plan	1st draft to inform 13 below	Oct 2004
13. Scottish Executive	SW Outputs & WIC's SRC remit	In light of 5, 11 & 12 officials advise Ministers	Oct 2004 – Dec 2004
14. WIC	Methodology	Response to consultation	Dec 2004
15. WIC	SW Strategic Business Plan	Comments	Dec 2004
16. WCCP/WIC	Principles of charging	Consultation feedback	Dec 2004
17. Ministers	SW Outputs & WIC's SRC remit	Ministers set WIC's remit & SW's output	Jan 2005
18. WIC	Opex Efficiency Targets	Publish draft targets	Jan 2005 (beginning)
19. Scottish Executive	Q&S III	Public announcement of outcome	Jan 2005 (mid)
20. WIC	Capex Efficiency Targets	Publish draft targets	Jan 2005 (end)
21. SW	SW Strategic Business Plan	2nd draft to inform SRC	Apr 2005
22. WIC	Annual Return 2005	Data request	Apr 2005
23. SW	Annual Return 2005	Data Submission	June 2005
24. WIC	Charge/Revenue caps	Publish draft caps	June 2005 (end)
25. Ministers	WIC remit	Ministers publish any changes arising from 24	Aug 2005 (mid)
26. WIC	Strategic Review of Charges	WIC finalises SRC in light of 25 (and any SW representations arising from 24)	Aug 2005 – Nov 2005
27. WIC	Charge/Revenue caps	Final caps announced	Nov 2005 (Mid)

I hope that you will find this timeline useful.

Yours sincerely

2 March 2004

To Chief Executive of Scottish Water

WIC 41: Reconciliation of WIC 18 with Finance Committee submission of 23/2/04

I refer to XXXX's letter of 23 February 2004 to the Finance Committee of the Scottish Parliament headed "Scottish Water Capital Investment Programme".

Can you please provide me with a reconciliation of the Investment table on Page 2 of this letter to the current version of the WIC 18 list (version 2.1). I would like to clarify that information being provided in the public domain is consistent and that there is clarify on the extent of delivery of Quality and Standards II.

I would ask you to provide this reconciliation by Friday the 12th of March.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive XXXX, Scottish Executive

8 April 2004

To Chief Executive of Scottish Water

WIC 42: Dates for submission of information to WIC 2004-05

The purpose of this letter is to outline the process to be followed for the submission of the 2003-04 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead. In the event that the Scottish Executive agrees to proceed with the introduction of regulatory accounting, I will write separately to you on the proposed way forward.

Annual Return

Firstly, I would like to take this opportunity to draw your attention to the fact that all information contained within the submitted Return will be published unless it can be demonstrated that the exclusion of certain information is necessary. I must emphasise that this should not affect the quality and quantity of the Tables, Commentary and Overview provided to WICS. I would therefore expect to see at least the same level of information in these documents as in previous years. Any text that Scottish Water feels should not be public information should be clearly highlighted as private and confidential. We can then discuss whether it is appropriate not to publish this information.

The procedure for the submission of the WIC Annual Return will be similar to that of last year. The format will be distributed by 23 April 2004, with completed Return, Commentary and Overview documents due on 18 June 2004. The template will include the following elements:

- 2 Sets of tables in Excel spreadsheet format, for data capture (1 set protected, 1 set unprotected).
- Detailed, up-dated guidance and definitions to assist completion of the tables.
- Edition Sheet, identifying changes carried out between 2002-03 and 2003-04 Return (detailed Change Controls will be available on request).

In my WIC 40: Strategic Review of Charges 2006 letter of 12 December 2003, a 1st draft of your Strategic Business Plan to inform the Strategic Review of Charges 2006 is due in October 2004 and therefore, Section S: Strategic Business Plan will not be issued or required for submission this year. Additionally, Section K: Investment Plan tables will not be issued or required for submission this year.

A small number of material changes have been made to the layout and content of the Annual Return Tables. These have already been communicated to Scottish Water and a dialogue is continuing. I am prepared to set up a workshop at Ochil House on Monday 26 April 2004 at 2.30pm and will be available to take you through the rationale and implication of these changes.

The query process introduced during the 2002-03 Annual Return process appeared to work well and I plan to build upon this for the coming year. I would note however, in last year's Return there were occasions where there were inconsistencies between the Commentary and the data tables, and also instances where the Commentary itself was internally inconsistent. Issues such as these should be checked and rectified by Scottish Water prior to submission, thereby reducing the time spent on the query process. The introduction of the Reporters Black and Veatch should help to ensure that Scottish Water is employing sound methods in recording, storing, retrieving and reporting the appropriate information to WICS in a form that meets our requirements. Text has therefore been added to each Section's definitions to indicate the focus of the work being carried out by Reporters.

The timescales for the investigation of WICS queries are as follows:

Item	Date Issued to SW	Date Due back from SW
Annual Return Queries	02/07/04	16/07/04
2nd round of Queries (if necessary)	30/07/04	13/08/04

I continue to draw your attention to the importance of providing data in the correct format. I am pleased to report that there was a marked improvement in the format of the data submitted last year thereby allowing a smoother upload process into the database. I am keen that this progress continues and look forward to a similar standard being submitted this year. Where data is not in the prescribed format and fails to upload, we will, as with last year, ask for resubmissions with the costs of any failed uploads being billed separately to you.

It remains a basic requirement that the tables be signed off in line with the guidelines to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information that you provide in the tables and Commentary documents. I still require year on year changes in data to be explained and, where appropriate, justified. I also need to know what material assumptions and adjustments have been made to derive reported numbers. In the interests of quality and comparability, it is essential that any changes made to data are declared as and when they are uncovered and not reserved for comment in the following submission of the Annual Return Commentary. Any alterations during the year to data in the Return should be sent to Monitoring with the appropriate signatures and reasons given for the change.

WIC Letter & Team Information Requests

REVENUE & TARIFFS:

- WIC 1/9/14/22 Revenue from Non-Domestic Customers/Non-Domestic Debt/Special Agreements for Large Customers – due on 14 May and 12 November 2004.
- WIC 4 Domestic Revenue due on 14 May and 12 November 2004.
- Scheme of Charges Submission due on 10 September 2004

WIC 22 and WIC 4 should be submitted in Excel spreadsheet format. The Revenue and Tariffs team will provide details of our specific requirements for the Scheme of Charges submission (including Excel Spreadsheets for completion) during the summer of 2004.

COMPETITION & CUSTOMER SERVICES:

• WIC 5 Customer Service Performance Excel based Reports due:

Qtr	Due Date
Q4	07/05/04
Q1	13/08/04
Q2	12/11/04
Q3	11/02/05
Q4	13/05/05

 WIC 6 Written Quality Performance Assessments (QPA) – Written complaints and telephone complaints where a written response is requested.

The following are a set of provisional dates and XXXX will be in touch with your staff to discuss WIC 6 data requests further

	SW provide Excel list of complaints	SW advised of selection	SW provide complaints files	QPA
Q4 2003/04	26/04/04	3/05/04	10/04/04	31/05/04
Q1 2004/05	26/07/04	2/08/04	9/08/04	30/08/04
Q2 2004/05	25/10/04	1/11/04	8/11/04	29/11/04
Q3 2004/05	24/01/05	31/01/05	7/02/05	28/02/05
Q4 2004/05	25/04/05	2/05/05	9/05/05	30/05/05

 WIC 6 Specialised QPA and Telephone QPA – These audits are being reviewed currently and we will write to Scottish Water in the future to discuss how to take them forward.

INVESTMENT & ASSET MANAGEMENT:

 Ongoing work on WIC 18 Substitution process for Q & S II. The initial base-line substitution process should be completed by early April 2004. However we anticipate some minor ongoing work in this area to allow small changes to the established base line. This work will be conducted through the WIC18 stakeholder group.

- Base-Line Investment programme for Q & S III (equivalent of WIC 18 for Q&S II). The format and timing of
 this is currently under discussion in the Q & S III project group. However, early in the 2004-05 financial year, and
 by end May 2004 at the latest, we will require a formal submission of the full Q & S III programme with project
 level definition and properly defined outputs. This will form an essential pre-requisite to the capital investment
 element of the Strategic Review of Charges. In the absence of full definition of the programme, we will base
 our assumptions of capital investment requirements in the Strategic Review of Charges on standard industry
 models.
- Updated Leakage Strategy (WIC 24) Word document, requested for 31 December 2004.
- Capital Investment Appraisal Audits (WIC 19). As last year, we anticipate this work being carried out in November/December 2004. The Investment Team will contact Scottish Water in the near future to finalise a programme.
- Capital Investment Return, Excel and Word based documents due one month after each quarter end.

COSTS AND PERFORMANCE:

- WIC 25 Monthly Submission of Resource Accounting and Budgeting (RAB Excel Tables & Word document) due on a monthly basis with dates being agreed separately with Scottish Water.
- **WIC 30** Accounting Separation As you are aware, for the 2005 Strategic Review we will require properly separated cost allocations between core and non core costs and between wholesale and retail costs. We are working on tables, definitions and guidance notes for this as a separate exercise from the Annual Return.

All of the above requests are essential to effective and transparent regulation and I wait for confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive

23 April 2004

To Chief Executive of Scottish Water

WIC 43: Annual Return 2003-04 Submission

This letter is my formal request for Annual Return information. In WIC 42 I set out a timetable for information requirements and as indicated in that letter, I am issuing today the Guidance notes and Table templates for the 2003-04 WIC Annual Return. The procedure for the submission of the Annual Return will be as outlined in WIC 42. I particularly draw your attention to the query process timetable that was discussed in WIC 42 as I hope that this will ensure a smooth query process takes place this year, building upon the progress made last year.

For the first time the Definitions include text on Guidance for Reporters. The introduction of the Reporters Black and Veatch should help to ensure that Scottish Water is employing sound methods in recording, storing, retrieving and reporting the appropriate information to WICS in a form that meets our requirements. Text has therefore been added to each section's Definitions to indicate the focus of the work being carried out by Reporters.

As the information provided materially affects our ability to benchmark accurately, it is therefore in your interests to submit as complete and accurate a Return as possible. All Commentary documents especially should be as complete, accurate, relevant and authoritative as possible and particular attention should be made to ensure that there are no inconsistencies either between Commentary and Tables or internally with the Commentary document itself.

Where modifications have been made to either Tables or Definitions, the edition number relevant to that document has been updated and Edition summary sheets have been inserted into the definitions.

As last year, I am happy to supply two copies of the Excel spreadsheet Annual Return tables, one password protected and one not, provided that only the password-protected tables are submitted back to WICS. Any tables submitted not in the prescribed protected format will be returned to Scottish Water and resubmissions requested.

The Annual Return tables must be signed off by the relevant Director and any unsigned tables will be returned. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the Monitoring team at WICS. I can confirm that the submission date following sign off by the Regulatory Management Group at Scottish Water is 18 June 2004.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

12 May 2004

To Chief Executive of Scottish Water

WIC 44: Finalisation of the WIC 18 Base-line for Quality and Standards II

With regard to the work associated with the Q & S II capital investment plan and the finalisation of the WIC 18 list, it would appear helpful at this point to be clear about the sequence of events for finalising this process.

As agreed at the WIC 18 stakeholder meetings, the WIC 18 programme will be finalised by the end of May 2004. At this time, Scottish Water will issue a final version of the programme for agreement by the regulators. Following this agreement, any subsequent changes to the programme will require to go through the agreed substitution process.

This final version of the programme will include:

- Substitution of the "red" quality projects (£47M) as agreed with SEPA and DWQR and validated by the Reporter.
- Identification of the WIC 16 "high priority" projects (£50M).
- The agreed allocation of the "north slippage" expenditure (£11.5M).
- Definition of the projects that comprise the Capital Maintenance element of the programme.
- A resolution of the "additional outputs" (£103M) element of the capital programme. I have met recently with your staff and agreed the components of a solution acceptable to both parties. This now requires agreement from the WIC 18 stakeholder group. Failing this, the resolution will be in accordance with point 2 of the ten principles as outlined in the letter of 31 July 2004 from Ross Finnie MSP.

I would ask for your assistance with ensuring that this important work is given a high priority over the weeks ahead.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Scottish Executive XXXX, SEPA XXXX, DWQ

27 May 2004

To Chief Executive of Scottish Water

WIC 45: Draft accounting separation tables

My office has recently held meetings with your staff to discuss the issue of the accounting separation within Scottish Water of the core/non-core and retail/wholesale elements of the business.

As explained at those meetings, we have asked Strategic Management Consultants and Deloitte to develop a set of draft regulatory tables to collect information on Scottish Water's operating costs. We are now ready to share the first draft of those tables with you and an electronic copy is being provided, along with the accompanying definitions. The deadline for completing and returning the tables was recently communicated to you as part of the list of key dates in the regulatory calendar. The following dates specifically relate to the draft regulatory tables:

27 May 2004 Deadline for issue of draft tables to Scottish Water 15 June 2004 Q&A on draft tables 18 August 2004 Scottish Water submits completed draft tables to WICS for the year 2003-04 9 September 2004 WICS writes to Scottish Water with views on the draft regulatory tables 16 September 2004 Workshop on completion of the regulatory accounting tables 29 October 2004 Resubmission of regulatory accounting tables as part of the business plan 16 November 2004 WICS issues revised regulatory accounting tables 22 December 2004 Scottish Water resubmits regulatory accounting tables for the year 2003-04 20 January 2005 WICS writes to Scottish Water regarding the regulatory accounting tables 27 January 2005 Workshop on regulatory accounts

Although these dates may be subject to minor changes, my office is committed to the development of robust regulatory accounting tables and guidelines for the Scottish water industry. I believe it is important that Scottish Water engages in the development process and I would encourage you to provide us with feedback. With regard to the draft tables that accompany this letter, the date of 15 June for a Q&A is for indicative purposes only and we would be happy to agree an alternative date that is suitable for all parties. I would also welcome formal written feedback on the draft tables, which you can provide prior to 18 August if you wish.

In the meantime, we will shortly be commencing a tender process to further develop regulatory tables and definitions and Regulatory Accounting Guidelines for the Scottish water industry. My office will arrange regular updates and discussions with your staff.

I look forward to hearing from you.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX, Water Service Unit

25 June 2004

To Chief Executive of Scottish Water

WIC 46: Strategic Review of Charges – first draft Business Plan submission

This letter is my formal request for Scottish Water's first draft Business Plan. I am issuing today the Guidance notes, definitions and Table templates for the first draft Business Plan. I am also issuing a copy of the draft Financial Model. The completed Plan is to be submitted by 29th October 2004. As you are already aware, it is very important that the agreed timeline is complied with.

The format for the first draft Business Plan draws on Ofwat's approach wherever appropriate. However, we have taken account of the Scottish context in framing both the information requirement and, in many cases, the definitions to be used. In particular, Scottish Water reports a detailed Asset Inventory and Cost Base analysis as part of the Annual Return. Accordingly, these two components are excluded from the first draft Business Plan reporting requirements, in order to avoid unnecessary duplication of effort.

In framing the format for the first draft, we have sought to identify the specific regulatory information that will inform the early stages of the Strategic Review of Charges. However, the draft Plan should also include all those elements that Scottish Water feels will inform debate, for the benefit of all stakeholders. In particular, Scottish Water should have due regard to the high level guidance issued by Ministers.

To assist a smooth process for the completion of the draft Plan, we have timetabled a process for dealing with issues arising and clarifications. This is as follows:

- 1. Scottish Water to inform us of any concerns and questions regarding the Guidance
 - by 5th July 2004.
- 2. Joint workshop with Scottish Water to resolve issues and clarify questions
 - 9th July 2004
- 3. Joint workshop with Scottish Water on draft Financial Model
 - 14th July 2004
- Scottish Water to raise final issues on Guidance Scottish Water to raise queries and concerns on draft Financial Model
 - by 16th July 2004
- 5. Guidance issued to Reporters
 - 21st July 2004
- 6. WICS issues final clarifications and responses to issues raised
 - 28th July 2004

The Business Plan tables must be signed off by the relevant Director and any unsigned tables will be returned. Please note that the template tables are security protected. I require 2 paper copies and an electronic version of each submission of the tables to be delivered to the Monitoring team at WICS.

If your staff have any immediate questions or queries relating to the draft Business Plan, they should not hesitate to contact XXXX XXXX or XXXX XXXX.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX, Scottish Executive

11 October 2004

To Chief Executive of Scottish Water

WIC 47: Strategic Review of Charges 2006-10 - delivery of Q & S II

My office has written to Scottish Water on three previous occasions to request that we receive a final version of the current capital programme and a clear statement of the likely delivery of the Quality and Standards II by the end of March 2006 (project by project). As you will understand this information is essential to our finalisation of our proposed approach to assessing the scope for efficiency in capital expenditure.

I have already had to delay the publication of this part of the methodology and am obviously keen to complete this work as soon as possible. I recognise that you are no doubt busy completing your first draft business plan, but I must emphasise that we are all working to tight deadlines and it is important that I am able to allow stakeholders some opportunity to comment on my proposals before I can finalise guidance for your second draft business plan. This is likely particularly to impact the specification of the baseline investment programme that we will require.

I would be grateful for a complete response no later than 29 October.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

13 October 2004

To Chief Executive of Scottish Water

WIC 48: Cost Estimates for the Quality & Standards III Quality Programme

I am currently awaiting the Reporter's report on the Quality & Standards III cost estimating systems. However, I have had a meeting with the Reporter where he gave me an initial overview of his findings. My understanding is that his main concern is the accuracy of some of the cost estimates for projects in the quality programme. I believe that these estimates have been prepared by Scottish Water Solutions. The Reporter understands that you are aware of his concerns and that you are currently working with Scottish Water Solutions to investigate, and where necessary, address these concerns.

I am sure that you will agree that it is imperative that these cost estimates are soundly based and that they are available in good time to inform Ministerial Guidance and the second draft business plan. Accordingly, can you please:

- 1. Inform me as a matter of urgency whether you agree that the Reporter has cause for concern. If you do not believe that he has cause for concern please give me reasons why he is incorrect.
- If you do concur that his findings are justified please send me an action plan detailing how you intend to address
 these concerns. The action plan should cover in some detail the methodology you plan to use to re-estimate the
 costs together with a set of milestones and appropriate dates showing when individual activities will be
 completed.

Given the urgency of the work I would like you specifically to address the following points in any methodology that you put forward:

- 1. Whether you plan to review all costs or only target those that you currently believe are wrong. If the latter, how will you decide which are wrong?
- 2. How you will assess the most material costs so that they may be targeted first.
- 3. Whether you intend to benchmark the revised costs against other estimating systems or industry norms. If you do not intend to undertake such an exercise how do you propose to give me comfort that the revised costs are correct?

I propose to ask the Reporter to review progress against these milestones.

I would be grateful for a full response to this letter by 27 October 2004.

Yours truly

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX, Scottish Executive

15 October 2004

To Chief Executive of Scottish Water

WIC 49: Proposed Schemes on Arran

You may be aware that my office has been in dialogue with both Scottish Water and SEPA regarding a complaint from the people of Arran relating to proposed schemes on the island.

Concerns have been raised over the alteration of original schemes and to allow my office to respond fully to these I require sight of early Investment Appraisals or Project Feasibility Studies outlining the original work planned for Arran as funded via Quality and Standards II.

I would be grateful to receive this information no later than Wednesday 27th of October.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

Cc XXXX XXXX, Chairman Isle of Arran Community Council XXXX XXXX, Community councillor for Blackwaterfoot and Shiskine

WIC letters Appendix 10

11 November 2004

To Chief Executive of Scottish Water

WIC 50: Public Private Partnership schemes

During discussions and correspondence regarding the 2002-03 Costs and Performance Report, Scottish Water raised concerns about including the costs of its Public Private Partnership (PPP) schemes within our benchmarking analysis of operating expenditure. We agreed that we would look into Scottish Water's concerns and examine ways of removing PPP costs from this benchmarking.

I am attaching a request for information that will allow us to separate out PPP costs. I would be grateful if you could ensure that all the requested information (if relevant) is included for each PPP scheme. I recognise that it may be difficult to define some of the requested costs, but I would appreciate Scottish Water's best estimates. I also attach guidance notes for this information request.

I would be grateful if Scottish Water could complete this information request by Friday 10 December 2004. You may find it helpful to explain the information that you provide with a detailed commentary.

If you have any queries regarding this request, please contact XXXX XXXX.

Yours sincerely

Alan D A Sutherland Water Industry Commissioner for Scotland

Guidance for completing the Public Private Partnership information requirement

The spreadsheet should be completed with 2003-04 data.

The name of each PPP scheme has been entered into the spreadsheet as per table E3 of the 2004 June Return. Scottish Water should ensure that it completes each cell for each scheme. Where a row is not applicable to a scheme, please enter N.

Only two rows within the spreadsheet contain calculated fields; the rest are input cells.

Where the units for data entry are given as "1/0", this indicates a yes / no choice. For example, under the heading 'Sewage treatment' Scottish Water should state whether a PPP scheme relates only to a large sewage treatment works, or whether it also includes small sewage treatment works. If a scheme contains both a large works and small works, then the appropriate entry in both rows would be 1.

We have allowed for up to three small sewage treatment works within each PPP scheme. If it is the case that a scheme has more than three small works, please insert the necessary rows within the spreadsheet. This is the only instance where the spreadsheet itself should be altered.

Turning to the issue of costs, we have asked Scottish Water to estimate the annual direct operating cost relating to each element of the PPP scheme. We appreciate that it could be difficult to provide accurate costs, but Scottish Water should employ suitable assumptions to arrive at sensible estimates. In such cases, Scottish Water should provide a commentary explaining its assumptions.

The exert, shown below, shows the level of detail on the spreadsheet supplied to Scottish Water which was required to be completed for the following PPP Schemes:

Fort William, Inverness, Hutton, Nigg, Persley, Peterhead, Fraserburgh, Lossiemouth, Buckie, BanfflMacDuff, Seafield, Newbridge, East Calder, Blackburn, Whitburn, Levenmouth, Dalmuir, Daldowie, Meadowhead, Stevenston, and, Inverclyde.

SCOTTISH WATER PPP INFORMATION

	Units	Annual Return reference
Project name	-	E3.0
Project status	-	E3.6
Scottish Water area:		
North West	1/0	-
North East	1/0	-
South East	1/0	-
South West	1/0	-

	Units	Annual Return reference
Scope of works		Totoronos
Sewerage	1/0	E3.7
Sewage treatment	1/0	E3.8
Sludge treatment	1/0	E3.9
Terminal pumping station	1/0	E3.10
Other (please state)	1/0	E3.11
cutor (produce state)	.,,	20.11
Sewage treatment		
Large works	1/0	-
Small works included in PPP scheme	1/0	-
Large sewage treatment works:		
Primary	1/0	E9.19
Secondary activated sludge	1/0	E9.20
Secondary biological	1/0	E9.21
Tertiary A1	1/0	E9.22
Tertiary A2	1/0	E9.23
Tertiary B1	1/0	E9.24
Tertiary B2	1/0	E9.25
Annual average resident connected population	000	E9.1
Annual average non-resident connected population	000	E9.2
Trade effluent load received by works	kg/COD/day	E9.3
Tanker load received by works	kg/COD/day	E9.4
Population equivalent of total load received	000	E9.5
Total load received	kg/BOD/day	E8.18
Small sewage treatment works:		
Number of small works included in scheme	nr	-
Small sewage treatment works (1):	410	5 0.70
Primary	1/0	E9.19
Secondary activated sludge	1/0	E9.20
Secondary biological	1/0	E9.21
Tertiary A1	1/0	E9.22
Tertiary A2	1/0	E9.23
Tertiary B1	1/0	E9.24
Tertiary B2	1/0	E9.25
Total load received	kg/BOD/day	E8.18

	Units	Annual Return reference
Small sewage treatment works (2):		
Primary	1/0	E9.19
Secondary activated sludge	1/0	E9.20
Secondary biological	1/0	E9.21
Tertiary A1	1/0	E9.22
Tertiary A2	1/0	E9.23
Tertiary B1	1/0	E9.24
Tertiary B2	1/0	E9.25
Total load received	kg/BOD/day	E8.18
Small sewage treatment works (3):		
Primary	1/0	E9.19
Secondary activated sludge	1/0	E9.20
Secondary biological	1/0	E9.21
Tertiary A1	1/0	E9.22
Tertiary A2	1/0	E9.23
Tertiary B1	1/0	E9.24
Tertiary B2	1/0	E9.25
Total load received	kg/BOD/day	E8.18
Sewerage		
Total length of sewer	km	E7.8
Length of critical sewer	km	E7.13
Number of pumping stations	nr	E7.15
Capacity of pumping stations (m3/d)	m3/day	E7.16
Capacity of pumping stations (kw)	kw	E7.16a
Number of combined pumping stations	nr	E7.18
Capacity of combined pumping stations (m3/d)	m3/day	E7.19
Number of stormwater pumping stations	nr	E7.20
Capacity of stormwater pumping stations (m3/d)	m3/day	E7.21
Number of combined sewer overflows	nr	E7.22
Number of combined sewer overflows (screened)	nr	E7.23
Sludge		
Disposal route:		
Farmland Untreated	1/0	-
Farmland Conventional	1/0	-
Farmland Advanced	1/0	-
Landfill	1/0	-
Incineration	1/0	-
Composted	1/0	-
Land Reclamation	1/0	-
Other	1/0	-

	Units	Annual Return reference
Thousand tonnes dry solids:		
Farmland Untreated	ttds	E10.2
Farmland Conventional	ttds	E10.2
Farmland Advanced	ttds	E10.2
Landfill	ttds	E10.2
Incineration	ttds	E10.2
Composted	ttds	E10.2
Land Reclamation	ttds	E10.2
Other	ttds	E10.2
Contract information		
Contract period	years	E3.41
Contract end date	dd/mm/yyyy	-
Annual charge	£m	E3.38
Public sector capital equivalent value	£m	E3.39
Estimated annual direct total operating cost	£m	E3.40
Estimated annual direct sewage treatment cost (large works)	£m	-
Estimated annual direct sewage treatment cost (small works 1)	£m	-
Estimated annual direct sewage treatment cost (small works 2)	£m	-
Estimated annual direct sewage treatment cost (small works 3)	£m	-
Estimated annual direct sewerage cost	£m	-
Estimated annual direct sludge cost	£m	-
Associated Scottish Water operating costs		
Estimated total Scottish Water costs associated with PPP	£m	-
Estimated total Scottish Water costs associated with:		
Sewage treatment	£m	-
Sewerage	£m	-
Sludge	£m	-

19 November 2004

To Chief Executive of Scottish Water

WIC 51: Potential for a Quality and Standards II overhang

I have received your latest version of the WIC18 project list that defines Quality and Standards II and the September quarterly investment return. I have carried out a reconciliation exercise on the two returns. I am writing to you now to seek your urgent comments on the results that have emerged from the reconciliation.

Put simply, my analysis has identified a significant number of projects in the investment return for which there are no matching projects in the WIC18. The Annex to this letter summarises the position that I have identified. This raises in my mind the real possibility that the WIC 47 return underestimates the projected overhang of Quality and Standards II.

You will appreciate that if this analysis is correct there would be major implications both for the successful delivery of Quality and Standards II and for the deliverability of the investment programme that the Executive will set for Scottish Water. In these circumstances, I would be grateful for your comments on what the analysis means for the information provided in WIC 47 and in your first draft business plan.

I am sending a copy of this letter to XXXX XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Estimate of Quality & Standards II undelivered portion

	QIR Anal	ysis (£M)
		£m
Q&S II spend to date (as of 30 September 2004)		693
Non Q+SII spend		268
Total spending on investment		961
Check of Non Q+SII:		
Notified new outputs spend (as of 30 September 2004)		0
Agreed Q&S I carry-over into Q&S II period (post eff)		47
Total		47
Revised Q+SII spend		740
Non Q+SII spend		221
Total spending		961
Estimated efficient spend for remainder of 2004-05 (Q+SII and notified outputs)		344
Declared investment spend for first half		216
Total estimated investment spending		560
Estimated efficient spend for 2005-06 (Q+SII and notified new outputs)		590
TOTAL EXPECTED Q+SII SPEND (INCLUDING NEW OUTPUTS)		1,674
		4.0
Estimated inefficiency on completed projects		10
TOTAL EVERATER O OIL OUTRUITO DEL IVERER (INOLLIDINO NEW OUTRUITO)	^	4.004
TOTAL EXPECTED Q+SII OUTPUTS DELIVERED (INCLUDING NEW OUTPUTS)	A	1,664
Dago OSC II programma		1,810
Base Q&S II programme		1,810
Notified new outputs (MIC 47)		110
Notified new outputs (WIC 47)		110
Capital inflation above SRC assumptions		120
σαριται πιπατιστί αυσνό στο ασσαπημιστίο		120
TOTAL REQUIRED INVESTMENT	В	2,040
TO THE HEADINGED HAVE OF MICHT		<u> </u>
UNDELIVERED PORTION	B-A	376
		310

24th November 2004

To Chief Executive of Scottish Water

WIC 52: Trade Effluent customer information

In order to carry out the Strategic Review of Charges 2006-10 and to analyse Scheme of Charges submissions I will require information on the discharge characteristics of Trade Effluent customers. In order to understand the incidence effects of tariff changes, I request that Scottish Water submits information for every Trade Effluent customer.

The information requested is similar to the WIC 1, 9, 14 and 22 requests. The information on Trade Effluent should also be submitted for the end of Period 6 and the end of Period 12 alongside the 'WIC 22' submission.

The attached spreadsheet (electronic version only) shows the information that I require for each customer. I believe that this should allow me to calculate the effects of tariff changes; I welcome any comments Scottish Water has on the suggested format.

The first semi-annual submission should be for Period 12, 2004-05. However, in order to ensure that information is in a suitable format, I request that a preliminary submission is made. Please record the date the information is extracted from the billing system on the submission. I request the preliminary submission is made before January 31st 2005.

If you have any questions or comments then please do not hesitate to contact me.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

	Heading	Units	Definition
A1	Date of beginning of billing period	-	For customers that joined the billing system after 01.04.04
A2	Date of end of billing period	-	For leavers only, date that customer left billing system
Custo	mer Information		
B1	Group Reference Number	-	
B2	Number of sites	-	For customers that are part of a group
В3	Customer Reference Number	-	
B4	Property Reference Number	-	
B5	Customer name	-	
B6	WIC sector	-	
B7	WIC sub-sector	-	
B8	SIC Code	-	
B9	Gross Rateable Value	£	
B10	Number of accrual days (2004-2005)	-	
B11	Harmonisation cap	1 / 0	State 1 if effluent customer receives harmonisation cap
B12	Treatment cap	1 / 0	State 1 if effluent customer receives treatment cap
Conse	ent conditions		
C1	Primary	1 / 0	State 1 if effluent customer discharges receives primary treatment
C2	Secondary	1 / 0	State 1 if effluent customer discharges receives secondary treatment
C3	Tertiary	1/0	State 1 if effluent customer discharges receives tertiary treatment
C4	Non-standard charges	1/0	State 1 if customer pays non-standard charges. I.e. an agreement not to pay charges at the published rate
C5	Start date of agreement	-	Date that customer's effluent agreement commenced
C6	Termination date of agreement	-	Date that customer's effluent agreement is due to be terminated
2003-0	04 Accruals		
D1	Operating charge opening accrual	£	
D2	Operating charge number of accrual days	days	
D3	Operating charge actual revenue associated with opening accrual	£	
D4	Annual availability charge opening accrual	£	
D5	Annual availability charge number of accrual days	days	
D6	Annual availability charge actual revenue associated with opening accrual	£	

	Heading	Units	Definition
2004-0	D5 Trade Effluent services		
E1	Operating - Fixed strength (solids)	mg/l	
E2	Operating - Fixed Strength (sCOD)	mg/l	
E3	Operating - Actual volume discharged - actual	m3	
E4	Operating - Actual volume discharged - accrual	m3	
E5	Operating - Actual volume discharged - forecast	m3	
E6	Availability - Consented Daily Volume	m3	
E9	Availability - Settled Biochemical Oxygen Demand load - actual	Kg/day	
E10	Availability - Settled Biochemical Oxygen Demand load - accrual	Kg/day	
E11	Availability - Settled Biochemical Oxygen Demand load - forecast	Kg/day	
E12	Availability - Total Suspended Solids load - actual	Kg/day	
E13	Availability - Total Suspended Solids load - accrual	Kg/day	
E14	Availability - Total Suspended Solids load - forecast	Kg/day	
Debt			
F1	Total Debt	£	
F2	0 - 30 Day Debt	£	
F3	31 - 60 Day Debt	£	
F4	61 - 90 Day Debt	£	
F5	91 - 120 Day Debt	£	
F6	121 - 150 Day Debt	£	
F7	151 -180 Day Debt	£	
F8	181 - 210 Day Debt	£	
F9	211 - 240 Day Debt	£	
F10	241 - 270 Day Debt	£	
F11	271 - 300 Day Debt	£	
F12	301 - 330 Day Debt	£	
F13	331 - 360 Day Debt	£	
F14	Debt from 2003-2004	£	
F15	Debt from 2002-2003	£	
F16	Debt from 2001-2002	£	
F17	Debt from 2000-2001	£	
F18	Debt from 1999-2000	£	
F19	Debt from 1998-1999	£	
F20	Debt from 1997-1998	£	
F21	Debt from 1996-1997	£	

WIC letters Appendix 10

8 December 2004

To Chief Executive of Scottish Water

WIC 53: Strategic Review of Charges – second draft Business Plan submission

This letter is my formal request for Scottish Water's second draft Business Plan. I am issuing today the Guidance notes, definitions and Table templates for the Plan. The completed Plan is to be submitted no later than 20th April 2005. As you are already aware, it is very important that the agreed timeline is complied with.

The format for the second draft Business Plan is in large part the same as the first. However, we have taken into account developments arising from the first draft Business Plan, our consultation on methodology and the work on accounting separation recently undertaken by Ernst & Young LLP. Accordingly, we have extended the information requirement, mainly in the following areas:

- Identification of retail costs
- Definition of Quality and Standards II overhang
- More detailed tariff information
- Output performance improvements

The second draft Business Plan will contain information that, together with Scottish Water's Annual Return, is essential to our Strategic Review of Charges. It should therefore include all those elements that Scottish Water feels will inform debate, for the benefit of stakeholders. In particular, Scottish Water should take full account of the guidance expected from Ministers in January 2005. Supporting information, where relevant, should be referenced in the Plan and submitted with the Plan.

To assist a smooth process for the completion of the second draft Plan, we have timetabled a process for dealing with issues arising and clarifications. This is as follows:

- 7. Second joint workshop with Scottish Water on Financial Model
 - 13th December 2004
- 8. Scottish Water to inform us of any concerns and questions regarding the Guidance
 - by 14th December 2004.
- 9. Joint workshop with Scottish Water to resolve issues and clarify questions Guidance issued to Reporter
 - 17th December 2004
- 10. Scottish Water to raise final issues on Guidance
 - by 23rd December 2004
- 11. WICS issues final clarifications and responses on issues raised to Scottish Water and to the Reporter
 - 10th January 2005

The Business Plan tables must be signed off by the relevant Director and any unsigned tables will be returned. Please note that the template tables are security protected. I require 10 paper copies and an electronic version of each submission of the tables to be delivered to the Monitoring team at WICS.

If your staff have any immediate questions or queries relating to the second draft Business Plan, they should not hesitate to contact XXXX XXXX or XXXX XXXX.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX, Scottish Executive

To Chief Executive of Scottish Water

WIC 54: Request for information relating to Water and Waste-Water treatment plants

I am writing to request information relating to Scottish Water's water and wastewater treatment works. As part of my analysis of your draft Business Plan submission, we require a list of each water and wastewater treatment works showing:

The name of the works

The Scottish Water operational area in which it is located

A location marker (e.g. grid reference or nearest community)

The population or population equivalent served

The design capacity of the works (MI/day or kg(BOD5)/day

I would be grateful if this information could be provided in electronic form (an excel spreadsheet) by Friday 17 December.

If your staff have have any queries regarding the format of this data requirement, please contact XXXX XXXX on 01786 430200.

Yours sincerely

Alan D A Sutherland Water Industry Commissioner for Scotland

13 December 2004

To Chief Executive of Scottish Water

WIC 55: Strategic Review of Charges: regulatory accounts

As you know, we engaged Ernst & Young LLP last August to develop regulatory accounts and to separate the reporting of core and non-core, and retail and wholesale accounts. We are now in a position to begin implementation. I am today issuing Regulatory Accounting Rules, definitions and template tables. I am also issuing Ernst & Young's detailed report. Electronic versions of all these documents are attached. We will be placing them on our website.

I am very grateful for the cooperation and input that Scottish Water has provided for this project. This has allowed us to debate and resolve many issues and concerns, and has enabled Ernst & Young to base the accounting definitions, wherever possible, on Scottish Water's own Activity Based Management system. I hope that this will make implementation more straightforward.

In our original timeline for the Strategic Review of Charges, we envisaged an earlier start to the project, and were due to issue regulatory accounting tables on 16 November 2004, for completion by 22 December 2004. I therefore ask Scottish Water to complete the attached tables (a resubmission for 2003-04) by 17 January 2005. The tables are as follows:

- M1 and M2: Analysis of operating costs (developed from draft versions issued last May)
- M1A and M2A: Analysis of turnover
- M1B and M2B: Analysis of fixed assets
- N: Transfer pricing tables

I appreciate that the timescale is short, but it will allow us to respond by 20 January, and to hold a workshop on 27 January, as in the original timeline. Please would you let me know if this causes any difficulties.

Following the workshop, by the end of March 2005 we will issue guidance for the completion of tables for 2004-05. These will be due for submission on 17 June 2005.

We intend to seek the involvement of Scottish Water's auditors for the 2004-05 regulatory accounts, and will take this forward with you in due course.

If your staff have any immediate questions or queries relating to the attached documents, please contact XXXX XXXX or XXXX XXXX.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX, Scottish Executive

WIC letters

20 December 2004

To Chief Executive of Scottish Water

Appendix 10

WIC 56: Ofwat Cost Base for benchmarking Scottish Water's investment plan

Ofwat has recently agreed to provide me access to its capital Cost Base. This will allow me to benchmark Scottish Water's planned investment programme for 2006-10 in a robust way. My staff will be working closely with Ofwat to ensure that the benchmarking analysis exactly follows Ofwat's procedures. I have also agreed with Ofwat to get expert independent technical review of the information in Scottish Water's Cost Base to ensure full comparability with England and Wales and to provide an independent audit trail of the analysis. I anticipate that this work will start in late January 2005. This will be in addition to the Reporter's audit.

The Cost Base is important to my analysis of capital investment efficiency. It is essential that Scottish Water's investment programme and its Cost Base are fully consistent with one another. I will be asking the Reporter to examine both these submissions and to bring to Scottish Water's attention any inconsistencies that may arise, before submissions are finalised. It would be prudent therefore to allow Scottish Water two rounds of Cost Base submissions, so that both of us can be sure that the Strategic Review of Charges draws on robust information. I therefore propose:

- A draft Cost Base, to be submitted by 4th February
- The Reporter's opinion on this submission, by 11th February
- An independent review of its comparability with England and Wales, by 25th February
- A final Cost Base, taking into account the Reporter's recommendations and those of the independent reviewer, to be submitted by 8th April 2005
- The Reporter's opinion and independent review of the final submission, by 20th April 2005 and 29th April, respectively

On a technical point, I note that Scottish Water has used 2002-03 as the base year for estimating the costs of the investment programme (specifically 2002 Q3). I therefore plan to use the 2002-03 Cost Base for benchmarking. This has distinct advantages, as it corresponds to the companies' Cost Base submissions to Ofwat. It also means that I will not require Scottish Water to re-cost its programme using a 2003-04 Cost Base. I believe that retaining the 2002-03 basis for Scottish Water's investment plan cost estimates will simplify the business planning process and avoid potential confusion. I trust that you would concur.

On this occasion, I have decided to use Ofwat's own guidance and definitions. This is to ensure full consistency with England and Wales. It is important that Scottish Water follows this guidance, and that there is full Reporter scrutiny. Nevertheless, Scottish Water will be able to draw on and refine its previous Cost Base submissions for 2002-03 and 2003-04.

The attached documents (electronic form) contain Ofwat's current Cost Base specifications. I will require a full commentary to accompany the submission.

In view of the above, I will not require a Cost Base submission with the 2005 Annual Return.

If your staff wish to discuss any aspect of this request, please contact XXXX XXXX.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX, Water Service Unit XXXX XXXX, Black & Veatch

To Chief Executive of Scottish Water

WIC 57: Corporation Tax

I request information about Scottish Water's current tax liabilities and its understanding of potential tax liabilities that may affect customers' bills in the future. This information will be used by my Office to analyse Scottish Water's revenue requirement in the Strategic Review of Charges 2006-10. The need for this information has arisen because Scottish Water has indicated that it now believes it will be liable to pay corporation tax in the 2006-10 period.

The three former water authorities had previously advised me that they did not expect to pay corporation tax until beyond 2010. I had therefore prepared my methodology for the Strategic Review on the assumption that Scottish Water would not incur corporate tax liabilities in the 2006-10 period. However, in its first draft business plan, Scottish Water has indicated that it now expects to develop corporate tax liabilities over the 2006-10 period. It is clearly in the customer interest that I fund this tax liability, but only to the extent that it is incurred through efficient operation.

My Office is currently updating our published financial model to ensure that we are able to make such an assessment. I am also being assisted with specialist advice from Ernst & Young LLP. From this process it is clear that further information will be required, particularly where specific assumptions and policies by Scottish Water can affect calculated corporation tax. Some of this information is general in nature and relates to policy, whilst in other areas I seek more specific information, I have grouped these requests into the following categories:

- Entirety Agreement;
- Allocation of capital expenditure to capital allowance pools;
- Treatment of infrastructure renewals;
- Treatment of Research and Development;
- Core and non-core functions;
- Deferred tax;
- Effects of history on projected tax charge;
- · Effects of Scottish Water Solutions on tax charge; and
- Differences between the circumstance of Scottish Water for tax purposes and those of water and sewerage companies in England and Wales.

I include tables in the appendix that should also be submitted.

Entirety Agreement

I understand that many water companies have Entirety Agreements with the Inland Revenue, whereby certain types of assets are treated as an entirety for tax purposes. Please confirm whether or not Scottish Water has an Entirety Agreement. If Scottish Water has an Entirety Agreement, please provide a summary of the expected tax effects of the Agreement for the 2006-10 period and provide either:

- · A copy of the Entirety Agreement, including any amendments; or
- Full details of the agreement, including the following:

The terms of the agreement and how this influences future accounting periods;

The assets included in the entirety agreement;

If dealt with within the Agreement, the rules for apportioning expenditure between revenue and capital expenditure;

How capital expenditure is allocated between capital allowance pools; and Treatment of maintenance expenditure.

Please also explain whether Scottish Water will be seeking to renew or amend this agreement within the 2006-10 period and any reasons for this.

Allocation of capital expenditure to capital allowance pools

I understand an Entirety Agreement may not cover certain types of capital expenditure or the apportionment of capital expenditure for the purposes of the Capital Allowances Act 2001. Where this is the case, please provide the details of any separate agreement or understanding, written or otherwise, that may exist with the Inland Revenue and explain the methodology that Scottish Water applies for apportioning this expenditure between capital allowance pools. Please also confirm that this is in accordance with Inland Revenue policy in this area.

Please also advise whether, in your view, the profile of expected capital expenditure over the period 2006-10 is such that there will be significant variations in the percentage of capital expenditure allocated to the different capital allowances pools in each year, or whether the percentage allocated to each pool should be roughly the same in each year.

Tax treatment of infrastructure renewals

From 1st April 2005, the water industry will be required to comply with Tax Bulletin 53. Please explain how this change will affect how Scottish Water treats its tax calculation and the effects on the projected levels of tax paid.

In particular, how will Scottish Water treat the infrastructure renewals expenditure that could have been classified as revenue expenditure before 1st April 2005? For example, what assumptions will be made for the life of the renewals expenditure and the period of time over which tax relief will be available? Please confirm whether these assumptions have been agreed with the Inland Revenue. Please also confirm whether this is purely a timing issue, and if not, provide details of the expected levels of disallowable expenditure.

Treatment of Research and Development

Please explain how Scottish Water classifies and treats Research and Development expenditure. Please also explain the use that Scottish Water has made of the 150% allowance for Research and Development in the 2002-06 period and expected use of it in the 2006-10 period.

Core and non-core functions

Please explain, in 2002-06, the assumptions Scottish Water has used (or intends to use) to allocate its capital allowances and tax losses between its core and non-core activities.

Deferred taxation

Please provide a schedule explaining how Scottish Water has calculated its deferred tax liability, including an explanation of how the depreciation charge in any one year can be allocated as between qualifying and non qualifying assets. We assume from the statutory accounts that deferred taxation is not discounted. Please confirm that this is the case. Please also provide an indication of the period of time over which the deferred tax liability is projected to reverse, and the extent to which tax losses are ring fenced in any way.

Effects of history on projected tax charge

Please explain the tax position that Scottish Water inherited from the former water authorities in 2002, having regard to:

- The existence of agreements with the Inland Revenue and the contents of these agreements (including Entirety Agreements);
- Any variations in policy by each of the three Water Authorities in terms of treatment of investment for tax purposes;
- The trading losses brought forward by each of the three authorities and the extent to which these trading losses were agreed with the Inland Revenue;
- The capital allowances inherited from the authorities. This should be divided into each of the capital allowance pools;
- The deferred tax position inherited from the water authorities and any adjustments made to this deferred tax position;
- The extent to which Scottish Water has utilised or intends to utilise trading losses and capital allowances in the 2002-06 period. This should be divided into each of the capital allowance pools;
- The extent to which Scottish Water has accumulated (or projects accumulation of) trading losses and capital allowances (divided into capital allowance pools) over the 2002-06 period. Please also consider the effect that a slower delivery of Quality and Standards II outputs will have on the tax losses and capital allowances accumulated:
- The status of tax returns and areas of uncertainty that may exist in areas still under negotiation with the Inland Revenue.

Effects of Scottish Water Solutions on tax charge

How does the existence of Scottish Water Solutions affect the tax payable by Scottish Water? For example:

- Will Scottish Water Solutions conduct research and development on behalf of Scottish Water, and if so what will the impact on Scottish Water's tax position be? and
- Where Scottish Water Solutions invests on behalf of Scottish Water could this reduce the capital allowances that Scottish Water could claim?

Please quantify any known tax effects in relation to Scottish Water Solutions.

Differences between the circumstance of Scottish Water for tax purposes and those of water and sewerage companies in England and Wales.

As there is no precedent of tax being paid by any water authority in Scotland, I believe that it is reasonable to compare the projected tax liabilities for Scottish Water to those for companies in England and Wales. I understand that each of the companies will have a different tax charge based on its own unique circumstances. However, it may be expected that Scottish Water should be "within the pack" for some comparisons. My office intends to make comparisons between, for example, tax with turnover and long-life capital pools with investment.

Please explain whether Scottish Water agrees with this principle and whether Scottish Water believes there are any unique circumstances that my office should take into account in comparative analysis of this nature. In addition, please provide details of any review work or benchmarking carried out by Scottish Water to ensure that the projected tax charge is efficient.

I ask that Scottish Water submits a response to this request by 18th March 2005. This is to allow my office time to analyse the information before the second draft business plan is submitted. In addition, Scottish Water may wish to use the content of this letter as a guide for the expected level of detail surrounding the tax calculation in the second draft business plan.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

Appendix: Tables of information for submission

Table 1: Opening position 2002-06

(£ million – outturn prices)	2002-03 (actual)	2003-04 (actual)	2004-05 (projected)	2005-06 (projected)
Opening pool of capital allowances – asset life < 25 years				
Opening pool of capital allowances – asset life >= 25 years				
Residual IBA's				
General provisions – opening balance				
Losses brought forward				

Table 2: Investment and capital allowances developed 2002-06

(£ million – outturn prices)	2002-03 (actual)	2003-04 (actual)	2004-05 (projected)	2005-06 (projected)
Total capital investment (excluding grants and contributions not taxable on receipt) (A)				
Infrastructure assets qualifying for 100% first year allowances (B)				
Non-infrastructure assets qualifying for 100% first year allowances (C)				
Infrastructure assets included in the general (25%) pool (D)				
Non-infrastructure assets included in the general (25%) pool (E)				
Infrastructure Assets qualifying for long life (6%) pool (F)				
Non-infrastructure Assets qualifying for long life (6%) pool (G)				
Infrastructure assets qualifying for Industrial Buildings Allowance (H)				
Non-infrastructure assets qualifying for Industrial buildings allowance (I)				
Infrastructure assets purchased under finance leasing (J)				
Non-infrastructure assets purchased under finance leasing (K)				
Capitalised revenue expenditure (Infrastructure assets) deducted in year of spend (L)				
Capitalised revenue expenditure (non-infrastructure assets) deducted in year of spend (M)				
Capitalised revenue expenditure depreciated - non – infrastructure (N)				
Capitalised revenue expenditure depreciated – infrastructure (O)				
Capitalised revenue expenditure not depreciated (P)				
Other assets not qualifying for capital allowances or revenue deductions (Q)				
Grants and contributions taxable on receipt (R)				

Note: (A) should equal the sum of (B) to (R)

Table 3: Effects of Tax Bulletin 53

Use this table to show the effects that Tax Bulletin 53 is projected to have on Scottish Water's tax liability. Scenario A should show the Scottish Water 2002-06 actual, scenario B should be a recalculation of the tax liability as if TB53 had applied to Scottish Water from 1st April 2002.

(£ million – outturn prices)	2002-03 (actual)	2003-04 (actual)	2004-05 (projected)	2005-06 (projected)
Scenario A: 2002-06 Actual				
Capitalised revenue expenditure claimed				
Depreciation of capitalised revenue expenditure				
Trading losses brought forward				
Total corporate tax paid				
Scenario B: 2002-06 effect of introduction of TB 53				
Capitalised revenue expenditure claimed				
Depreciation of capitalised revenue expenditure				
Trading losses brought forward				
Total corporate tax paid				

Table 4: Extent of entirety agreement

(£ million – outturn prices)	2002-03 (actual)	2003-04 (actual)	2004-05 (projected)	2005-06 (projected)
Capital investment (infrastructure) covered by entirety agreement				
Capital investment (non-infrastructure) covered by				
entirety agreement				
Capital investment (infrastructure) not covered by				
entirety agreement				
Capital investment (non-infrastructure) not covered by				
entirety agreement				

Table 5: Research and Development Revenue expenditure

(£ million – outturn prices)	2002-03	2003-04	2004-05	2005-06
	(actual)	(actual)	(projected)	(projected)
Research and Development allowance claimed				

WIC letters Appendix 10

3rd February 2005

To Chief Executive of Scottish Water

WIC 58: Public Private Partnership contracts

Scottish Water's 1st draft investment plan refers to its proposed investment at current PPP sites, as part of the delivery of Quality and Standards III outputs. In order to allow due scrutiny of the need for this investment and the scale of costs proposed, I require copies of the contracts. I will want to ensure that the proposed investment reflects the contractual obligations of Scottish Water and is not covered under the obligations of the consortium partner to each contract. Please could you supply full copies of all the current PPP contracts by 18th February.

In the event that I am not able to confirm that the obligation to carry out each proposed investment project at PPP sites lies with Scottish Water, I will not include funding for it in the Strategic Review of Charges. However I will in each such case assume and expect that Scottish Water will comply with all relevant legislation affecting the operation of the PPP site concerned.

Yours sincerely

ALAN D A SUTHERLAND Commissioner

Date: 3rd March 2005

To Chief Executive of Scottish Water

WIC 59 Strategic Review of Charges 2006-10: Regulatory Capital Value and allowed Rate of Return

This letter is to advise you of the Regulatory Capital Value (RCV) and rate of return that I am minded to use in the Draft Determination. In coming to these conclusions I have taken full account of the guidance issued by the Scottish Ministers on 9 February 2005.

RCV

I intend to set Scottish Water's initial RCV at between £3.3 billion and £3.8 billion. My analysis to date would suggest a figure toward the higher end of this range. This is the RCV that would apply on 31st March 2006 in outturn prices if Quality and Standards II were delivered in full and in line with the efficiency targets set in the Strategic Review of Charges 2006-10. I will then subtract the assessed Quality and Standards II overhang from this initial value.

I have used a comparator approach with the water and sewerage companies in England and Wales to arrive at these figures. This is consistent with the proposals set out in Volume 3 of the Methodology Consultation.

The use of the RCV method of price setting does not require me to assume a particular level of borrowing. I am minded to use the financial ratios used by Ofwat in its 2004 price determinations to assess the financial strength of Scottish Water. I will also continue to monitor the debt payback ratios that underpinned the Strategic Review of Charges 2002-06.

Rate of Return

I intend to set a rate of return on Scottish Water's RCV of 0.72% real post-tax. This allowed rate of return on the RCV should be sufficient to ensure that Scottish Water can meet the objectives set by Ministers and is able gradually to improve its financial strength. The allowed rate of return for Scottish Water's retail subsidiary company will reflect our assessment of the market cost of capital. In order to ensure that Scottish Water is not disadvantaged by divergence between CPI and RPI, I have decided to set Scottish Water's wholesale and retail price caps relative to RPI. The cost of capital is presented here in real (RPI adjusted) terms.

I have adopted the hybrid approach set out in Volume 3 of the Methodology Consultation. I have combined the observed current real cost of debt with an estimate of an appropriate rate of return on customer retained earnings. I have assumed a pre-tax allowed rate of return on customer retained earnings equal to the post-tax allowed rate of return for debt.

Under this approach there should be no incentive for Scottish Water to seek to change its ratio of debt to RCV. If the return on the customer retained earnings is greater than the return on debt, Scottish Water would have an incentive to repay debt. In contrast, if the return on the customer retained earnings is lower than the return on debt, Scottish Water would have an incentive to take on more debt.

I also intend to allow in full the net costs of embedded debt (the actual cost of servicing debt on Scottish Water's balance sheet at 31 March 2004 less the cost of servicing this debt if it had all carried a coupon of 4.6% nominal pre-tax). My calculation of the allowed cash rate of return on the RCV will therefore include:

Embedded debt: The net cost of debt at 31 March 2004 over and above a 4.6% nominal pre-tax

coupon (for each year of the regulatory control period, but reflecting any maturities of higher coupon debt and, if relevant, any transfers of debt to Scottish Water's retail

subsidiary)

New debt: 2.1% real pre-tax (0.72% real post tax) multiplied by the leveraged portion of the

RCV for each year

Customer retained earnings: 0.72% nominal post tax multiplied by the RCV for the un-leveraged portion of the

RCV for each year

I would request that Scottish Water uses the allowed rate of return that I have set in this letter in its second draft business plan. Scottish Water may choose any value for its initial RCV from the range that I have indicated. This request does not preclude Scottish Water from making further representations on its initial RCV and the allowed rate of return in its second draft business plan. I have, however, taken account of the comments of all stakeholders in response to my methodology consultation in reaching these conclusions.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

cc XXXX XXXX XXXX XXXX

Date: 22 April 2005

To Chief Executive of Scottish Water

WIC 60: Dates for submission of information to WIC 2005-06

The purpose of this letter is to outline the process to be followed for the submission of the 2004-05 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead.

Annual Return

The procedure for the submission of the WIC Annual Return will be similar to that of last year. The format will be distributed by 22 April 2005, with completed Return, Commentary and Overview documents due on 17 June 2005. The template will include the following elements:

- 2 Sets of tables in Excel spreadsheet format, for data capture (1 set protected, 1 set unprotected); and
- Detailed, up-dated guidance and definitions to assist completion of the tables, also including. Edition Sheet, identifying changes carried out between 2003-04 and 2004-05 Returns (detailed Change Controls will be available on request).

Upon submission of the completed Return, I plan to carry out a similar query process to that of previous years. The timescales for the investigation of WICS queries are as follows:

Item	Date Issued to SW	Date Due back from SW
Annual Return Queries	01/07/04	15/07/04
2nd round of Queries (if necessary)	29/07/04	12/08/04

WIC Letter & Team Information Requests

REVENUE & TARIFFS:

- WIC 1/9/14/22 Revenue from Non-Domestic Customers/Non-Domestic Debt/Special Agreements for Large Customers - due on 13 May and 11 November 2005.
- WIC 4 Domestic Revenue due on 13 May and 11 November 2005.
- Scheme of Charges Submission due on 9 September 2005

WIC 22 and WIC 4 should be submitted in Excel spreadsheet format. The Revenue and Tariffs team will provide details of our specific requirements for the Scheme of Charges submission (including Excel Spreadsheets for completion) during the summer of 2005.

COMPETITION & CUSTOMER SERVICES:

• WIC 5 Customer Service Performance Excel based Reports due:

Qtr	Due Date
Q4	13/05/05
Q1	12/08/05
Q2	11/11/05
Q3	10/02/06
Q4	12/05/06

• WIC 6 Written Quality Performance Assessments (QPA) - Written complaints and telephone complaints where a written response is requested.

We will recommence collecting WIC 6 data this year. We will come back separately to about collecting WIC 6 data for 2004-05:

	SW provide Excel list of complaints	SW advised of selection	SW provide complaints files	QPA
Q4 2003/04	23/05/05	30/05/05	6/06/05	27/06/05
Q1 2004/05	25/07/05	1/08/05	8/08/05	29/08/05
Q2 2004/05	24/10/05	31/10/05	7/11/05	28/11/05
Q3 2004/05	23/01/06	30/01/06	6/02/06	27/02/06
Q4 2004/05	24/04/06	1/05/06	8/05/06	21/05/06

 WIC 6 Specialised QPA and Telephone QPA – These audits will remain under review and we will write to Scottish Water in the future to discuss how to take them forward.

INVESTMENT & ASSET MANAGEMENT:

- Q & S II Baseline Investment programme (WIC 18). The Final version (Version 3.4) of the WIC 18 list is expected by the end of May 2005.
- Base-Line Investment programme 2006-10 (Q & S IIIa). Following the finalisation of the Strategic Review of Charges 2006-10, Scottish Water should submit the finalised base-line investment programme for the period. This may take the form of a "Table K" submission although the format has not yet been determined.
- Updated Leakage Strategy (WIC 24) Word document, requested for 31 December 2005.
- Capital Investment Appraisal Audits (WIC 19)
 We anticipate this work being carried out in November/
 December 2005. The Investment Team will contact Scottish Water in the near future to finalise a programme.
- Capital Investment Return , Excel and Word based documents due one month after each quarter end.

COSTS AND PERFORMANCE:

- WIC 25 Monthly Submission of Resource Accounting and Budgeting (RAB Excel Tables & Word document) for the report year 2005-06, due on a monthly basis on the following dates:
 - 27 May 2005
 - 28 June 2005
 - 28 July 2005
 - 26 July 2005
 - 26 August 2005
 - 28 September 2005
 - 28 October 2005
 - 28 November 2005
 - 30 December 2005
 - 27 January 2006

- 27 February 2006
- 27 March 2006
- 28 April 2006
- WIC 55 Regulatory Accounts and Transfer Pricing tables 2004-05 These are due on 17 June 2005 (As per WIC 55 Letter of 13 December 2004).

All of the above requests are essential to effective and transparent regulation and I wait for confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

cc xxxx xxxx, Scottish Executive

Date: 22 April 2005

To Chief Executive of Scottish Water

WIC 61: Annual Return 2004-05 Submission

This letter is my formal request for Annual Return information. In WIC 60 I set out a timetable for information requirements and as indicated in that letter, I am issuing today the Guidance notes and Table templates for the 2004-05 WIC Annual Return. The procedure for the submission of the Annual Return will be as outlined in WIC 60. I particularly draw your attention to the query process timetable that was outlined in WIC 60 as I hope that this will ensure a smooth query process takes place this year, building upon the progress that has been made in the last two years.

There are several parts of the Annual Return that shall not be issued or require completion this year. These are:

- Section H, Asset Inventory and System Performance, Tables H11-H16: I have considered the findings of the Reporter from the audit of the 2003-04 Annual Return in relation to the frequency of reporting and have subsequently decided that Tables H11-H16 do not require to be completed this year. I will require only Tables H1-H6;
- Section J, Cost Base: As you know, WIC 56 was issued in order to ensure that Scottish Water's Cost Base and Investment Programme were consistent with one another. Due to my intention to use the 2002-03 Cost Base for benchmarking purposes in the Strategic Review of Charges 2006-10 and that I do not require Scottish Water to re-cost its investment programme using a 2003-04 Cost Base, Section J has not been issued this year;
- Section K, Investment Plan: This section will not be issued or required for submission at this point in time as the
 Baseline investment programme has not been finalised for the period 2006-10. I will be in contact with you in due
 course to advise of any separate reporting that may be required as a consequence; and
- Section S, Strategic Business Plan: This section shall not be issued this year as the Business Plan submissions as part of the Strategic Review of Charges 2006-10 process will provide this information.

A small number of material changes have been made to the layout and content of the Annual Return Tables and these have already been communicated to and discussed with Scottish Water. In particular, there are new tables and sections. These are:

- Table E3a: PPP Cost Analysis;
- Table F11: Financial Model Taxation Analysis;
- Table H1a: MEAV Summary; and
- Section P: Tariff Basket Information (11 tables);

Where modifications have been made to either Tables or Definitions, the edition number relevant to that document has been updated and the relevant Edition summary sheets updated from their introduction last year in the definitions.

As last year, I am happy to supply two copies of the Excel spreadsheet Annual Return tables, one password protected and one not, provided that only the password-protected tables are submitted back to WICS. Any tables submitted not in the prescribed protected format will be returned to Scottish Water and resubmissions requested.

I feel that the introduction last year of the Reporter from Black and Veatch has helped to ensure that Scottish Water is employing sound methods in recording, storing, retrieving and reporting the appropriate information to WICS in a form that meets our requirements. Scottish Water is therefore asked to pay close attention to the Reporter's comments from his report on the Annual Return 2003-04, and that all is done to address any concerns raised. Scottish Water should also act upon any recommendations that the Reporter has made, either through the report itself or other forms of correspondence made since then.

Again, as with last year, I would like to remind you that the information you provide materially affects our ability to benchmark accurately. It is therefore in your interests to submit as qualitative, complete and accurate a Return as possible. All Commentary documents especially should be as complete, accurate, relevant and authoritative as possible and particular attention should be made to ensure that there are no inconsistencies either between Commentary and Tables or internally with the Commentary document itself. Scottish Water is reminded that it should adhere to the definitions and advise of any issues in the accompanying Commentary documents, rather than reporting the information differently. I still require year on year changes in data to be explained and, where appropriate, justified. I also need to know what material assumptions and adjustments have been made to derive reported numbers. I will also take this opportunity to remind you that I aspire the Confidence Grades allocated to the data reported to be as high as possible.

In the interests of quality and comparability, it is essential that any changes made to data are declared as and when they are uncovered and not reserved for comment in the following submission of the Annual Return Commentary. Any alterations during the year to data in the Return should be sent to Monitoring with the appropriate signatures and reasons given for the change.

I would like to take this opportunity to draw your attention to the fact that all information contained within the submitted Return will be published *unless* it can be demonstrated that the exclusion of certain information is necessary. I must emphasise that this should not affect the quality and quantity of the Tables, Commentary and Overview provided to WICS. I would therefore expect to see at least the same level of information in these documents as in previous years. This year, I would like any text that Scottish Water feels should not be made public under the Freedom of Information (Scotland) Act 2002 to be clearly highlighted and we can then discuss whether it is appropriate or not to publish this information.

Finally, Scottish Water is reminded that it remains a basic requirement that both electronic and paper copies of the tables be fully signed off in line with the guidelines to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. The Annual Return tables must be signed off by the relevant Director - any unsigned tables will be returned. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the Monitoring team at WICS. I can confirm that the submission date following sign off by the Regulatory Management Group at Scottish Water is 17 June 2005, and that the guery process dates are as follows:

Item	Date Issued to SW	Date Due back from SW
Annual Return Queries	01/07/04	15/07/04
2nd round of Queries (if necessary)	29/07/04	12/08/04

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact xxxx xxxx or xxxx xxxx.

Yours sincerely,

ALAN D A SUTHERLAND Commissioner

Date: 22 April 2005

To Chief Executive of Scottish Water

WIC 62: Request for increased information on Scottish Water's 2nd draft business plan investment programme.

I refer to your business plan submission of 20 April 2005.

As set out in our investment plan guidance document of December 2005, we require a project level definition of the investment programme. The programme should contain discrete projects with clearly stated drivers, investment categories and outputs.

Table C of your submission does not comply with these requirements. There are a number of programme lines where an insufficient level of project breakdown has been provided. As examples, the following lines do not provide sufficient information for our analysis of the programme or for stakeholders to monitor programme delivery:

31756	Water Resources - WFD controls on abstraction and		
	impoundment - Rolling Programme	Water	Quality
30385	Internal Flooding – SWW	WasteWater	Enhanced
30924	STW - SVCW SCOTLAND WIDE	WasteWater	Base
30555	Odour management – SWW	WasteWater	Enhanced
30395	IPPC Schemes	WasteWater	Quality
30897	SPS - SVCW SCOTLAND WIDE	WasteWater	Base
30753	Scottish Water Bylaws	Water	Quality

As you will be aware, the lack of definition of the investment programme in Quality and Standards II has created significant issues for all stakeholders. We have therefore made it clear in our Methodology documents and the business plan guidance that we will require, to the full extent possible, project level definition of the investment programme.

We also note that the current definition of the £2.3billion Quality and Standards II programme comprises over 3.500 project lines. By contrast, the Table C definition of your £3.2billion Quality and Standards IIIa investment programme contains only 1800 project lines. This suggests that the level of project definition in your submission is significantly lower than has been achieved with Quality and Standards II.

Can you please resubmit Table C with, to the full extent possible, a project level definition of your investment proposals. Given the challenging timescales for the review process, I will require this resubmission by Wednesday the 27th of April 2005 at the latest.

Yours sincerely

Alan D A Sutherland Water Industry Commissioner for Scotland

copied to: x xxxx, Scottish Executive

x xxxx, Scottish Executive

x xxxx, SEPA x xxxx, SEPA x xxxx, DWQR

Appendix 11

MD 203 Interim determinations



Office of the Director General of Water Services
Centre City Tower, 7 Hill Street, Birmingham BS 4UA
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MD 203

TO ALL MANAGING DIRECTORS OF WATER AND SEWERAGE COMPANIES AND WATER ONLY COMPANIES

10 May 2005

سمعلا

Managing

INTERIM DETERMINATIONS 2005

This letter sets out our intended approach to any interim determinations which we are requested to make or we initiate in 2005, in terms of principles, methods and process. These reflect the requirements of part IV of Condition B of the licence and in some cases build on our experience of earlier interim determinations. This letter does not cover applications under the 'substantial effect clause'. This letter provides guidance on how we will approach the following key issues in 2005:

- changes up or down in the number of meter optants;
- ii) increases in bad debt and the costs of managing debt;
- increases in charges for abstractions and discharges to controlled waters;
- iv) charges for lane rental/traffic management;
- increases in the taxation of infrastructure expenditure arising from the introduction of International Financial Reporting Standards (IFRS);
- vi) changes in the construction price index (where applicable);
- vii) new enhancement expenditure;
- viii) other relevant changes of circumstance; and
- ix) counter-notices.

As price limits for 2005-10 were set in December 2004, we do not anticipate receiving many, if any, interim determination applications this year. However, we will apply the provisions of the licence as set out. In addition, we believe that all parties will benefit from early discussions to consider the issues and processes to be followed. If your company is contemplating an application please contact Kieran Duffy (0121 625 1446), who is our Project Manager for interim determination applications. Your Ofwat Board lead contact will also be involved in overseeing the IDoK process and issues for your company.

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MD 203 10 May 2005 Page 2

A. PROCESS

There are two important, general points.

- Interim determinations can only deal with the impact of relevant items (relevant changes of circumstance and notified items). An interim determination is not a mini-periodic review.
- The procedure is also available to us that is, we can decide, regardless of whether you have applied for an interim determination, that we ought to take action.

The minimum timetable for interim determinations is set out in Condition B of the licence as follows:

- Following the licence modification in April this year, to change prices in the 2006-07 charging year either you or we must trigger an interim determination process by no later than 15 September 2005.
- Where this happens the other party may issue a counter-notice within 14 days.
- We must make an interim determination decision within three months of a request.

For several years now we have issued and consulted on draft interim determinations. This enables us to consider stakeholders' views and take representations from the relevant WaterVoice Committees. Early discussion of a potential application with us will assist this also. We encourage companies to inform their relevant WaterVoice Committee about any potential interim determination application.

In recent years most companies have involved their Reporters from the start of the process. Their scrutiny and opinion is very useful to you and to us. Consequently, we encourage you to invite your Reporter to attend any early discussions with us and involve them in the subsequent development of the proposed application.

Any application for an interim determination must be submitted by Thursday 15 September 2005. Your supporting documentation and Reporter's report should be submitted on the same date. If this deadline is met we will announce determinations no later than Thursday 15 December 2005. If we decide to trigger an interim determination we will inform the company by 15 September and announce determinations by 15 December.

.......

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We believe that customers' interests are best served by operating an open and transparent approach to regulation. Therefore, we believe it would be beneficial for a company that requests an interim determination of price limits to inform its customers when it makes an application. We will publicly announce any interim determination we decide to initiate.

I attach at annex A the timetable we intend to follow this year. Please tell us of any difficulties you foresee with this.

In previous years we made the electronic spreadsheet that underpins our interim determination calculations available to all companies. The version that we will use for 2005 is now available to download from the Ofwat website (www.ofwat.gov.uk). It includes table formats that we use to summarise our interim determination. The spreadsheet automates the assessments of triviality and materiality and calculates the annual allowable amount and the K adjustment required.

If a company believes that there has been a change in the obligations placed on it since price limits were last set, but its valuation of the changes does not exceed the materiality threshold of 10%, these will not be dealt with by the process set down in this letter. Companies have the opportunity to use the procedures set down in MD197, the AMP4 change protocol. Where companies use these procedures we will indicate the items to be logged up or down at the next price review. We aim to respond to a request for approval/confirmation within six working weeks of receipt of all the relevant material from the company.

B. METHOD OF CALCULATION SET OUT IN CONDITION B

We will issue any counter-notices no later than 14 days after receipt of a company's application. Where possible we will indicate our intention to do so during any early discussions that we have with individual companies.

We will examine each application against the list of questions set out in Condition B paragraph 13/14.2°. The determination will either be a revision to price limits, or no revision to price limits because the meteriality threshold has not been met.

.......

[&]quot;Where a number appears such as 13/14, the first one is the paragraph in the water companies" licences and the second is the number in the water and severage companies" licences.

MD 203 10 May 2005 Page 4

1) Relevant change of circumstance and notified items

Interim determinations may be available, provided that each of the matters at issue is a relevant item; that is either a relevant change of circumstance (RCC) or a notified item.

The relevant changes of circumstance are defined in Condition 8. The standard ones are:

- RCC(1): a new or changed legal requirement (each of these is also defined);
- RCC(2): differences in the proceeds of land disposals from that assumed when price limits were last set; and
- RCC(3): failure to achieve some output, funding for which was provided at the last price setting.

A few companies have a fourth – RCC(4) – changes in the construction price index (COPI) from what was assumed at the last price setting.

Notified items are anything which, at a price setting, we have recorded specifically as having not been allowed for (either in part or at all).

There are currently five. .A difference from the assumptions made when price limits were last set in:

- i) changes up or down in the number of meter optants:
- ii) increases in bad debt and the costs of managing debt;
- iii) increases in charges for abstractions and discharges to controlled waters;
- iv) charges for lane rental/traffic management; and
- increases in the taxation of infrastructure expenditure arising from the introduction of International Financial Reporting Standards (IFRS).

2) Materiality

The materiality threshold and its arithmetic are set out in Condition B. This is calculated using the appropriate discount rate (see below). The costs, savings and changes in revenue used in the arithmetic will reflect our judgements of what is reasonably attributable to the relevant item(s) in question.

3) Triviality

We will only take non-trivial changes into account in price limits. Following our proposal in 'Setting water and sewerage price limits for 2005-10: Framework and approach' (March 2003) to amend the definition of triviality (at para 9.12) we will use the following approach.

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If the net present value (NPV) of the change is less than 1% of the relevant service turnover (water or sewerage) to which it, in our view, relates exclusively, then it would not normally be carried forward to the materiality test included in any reassessment of price limits. Where it appears to us that a change does not relate exclusively to either the water service or the sewerage service, triviality will be assessed with reference to 1% of the combined water and sewerage turnover.

When assessing triviality, we group together all schemes in response to a single relevant change of circumstance. For example, all the work necessary to comply with a cryptosporidium notice will be considered together (both monitoring and additional treatment costs).

4) Discount rate

For the majority of companies, Condition B states that the investment allowed for in the interim determination should be remunerated using the current rate of borrowing. In these cases the value used will be pre-tax cost of debt. For all other companies the discount rate will be the pre-tax rate of return reflecting the weighted average cost of capital.

The actual value will be assessed during the interim determination period. We will confirm the value we are using for each company. In the meantime, you should assume the discount rate will be the same as the value used at the last price setting.

5) Annual allowable amount and revised price limits

Condition B requires the determination of an annual allowable amount and prescribes the method of calculating the revised price limits.

These items will be calculated in accordance with Condition B using the discount rate (see above) and our judgements on the costs and revenue losses as used in the materiality calculation. We will provide details of our calculation of these items in the format and at the level of detail which will be set out in the spreadsheet.

Licence matters.

The current licence for all companies incorporates the changes set out in MD194, 5 August 2004. In MD194 we said that we would consult further on a package of the more contentious changes to the interim determination mechanism during 2005-06, to apply from 2010 onwards. We will take this forward during the current year.

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C. OPTIONAL METERS

1) Optant numbers

In the final determination our revenue forecasts for 2005-10 used assumptions about optant numbers in 2004-05. In assessing the impact of changes in the uptake of optional metering on 2005-10 revenues, we will use out-turn figures for numbers of optants in 2004-05, in place of the assumed figures used for the final determination.

To arrive at assumptions about the number of meter optants expected by 2009-10, we will consider company-specific evidence and trends. However, we will be cautious in drawing conclusions from the level of metering observed during the first months following significant shifts in bills in April 2005.

2) Meter location

For the 2004 final determination, companies' assumptions on meter location, as presented in the Final Business Plans, were generally accepted. We would expect you to continue to adopt the Final Business Plan assumptions on meter location unless you provide compelling evidence supporting changed assumptions.

3) Optant characteristics

For the 2004 final determination, company-specific assumptions were applied based on Final Business Plan information and other available evidence. We will continue to adopt this approach:

We will expect all companies to present updated evidence on optant characteristics. This should be based on out-turn evidence, for example from billing data. Companies should set out evidence for successive cohorts of optants showing:

- post-switching demand (in the first year after opting and subsequent years);
- . the rateable value of optants' homes; and
- the change in water consumption associated with the move to measured charging (to date we have normally assumed a figure of 5%).

We will assess the robustness of evidence provided by companies in reaching judgements about the likely characteristics of future optants.

We will assume that optants have average characteristics in terms of supply leakage (both when unmeasured and subsequently when measured), unless compelling evidence is presented to the contrary.

..../....

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4) Other

In assessing incremental investment requirements relating to the supply/demand balance, we will take account of any impact on demand expectations arising from out-turn trends in optional metering. This could reduce growth expenditure needs or operating costs.

D. BAD DEBT

At the 2004 Periodic Review, Ofwat retained the operation of a one-way Notified Item for increases in bad debt and debt management costs where these relate to private dwellings or to premises where any part constitutes a private dwelling.

As companies are required to show how costs have increased in each full year of the current period (2005-10) we consider it unlikely that this notified item will be triggered in 2005.

However, for information, the basic methodology when calculating the annual allowable amount will follow the same principles as used in previous years' interim determinations.

Firstly, companies will be required to demonstrate that costs have increased above those reported in 2003-04. The net change between the base year (2003-04) and each full year of the 2005-10 period will be determined for the total of four components:

- Financing costs associated with increases in revenue outstanding.
- Outstanding revenue written-öff.
- Operating costs involved in managing outstanding revenue.
- Capital expenditure due to investment in debt management systems.

Secondly, companies must show that:

- their debt management activities are undertaken in an efficient and costeffective manner using good practices established by other service providers; and
- any increase experienced is in general terms due to the disadvantageous conditions under which water and sewerage undertakers are required to operate as compared with other service providers.

If any company would like further detail on this Notified Item, additional guidance will be available from Sally Inett in our Service and Performance Team.

......

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E. ABSTRACTIONS AND DISCHARGES TO CONTROLLED WATERS

At the 2004 Periodic Review, Ofwat assumed there would be no real increase in unit rates of charging for abstractions and discharges to controlled waters above those reported in 2003-04.

The costs associated with any net increase in the total charges payable for existing abstractions or discharges, arising from real changes in unit rates above the charges reported for 2003-04 is a notified item.

As only five months of 2005-06 will have elapsed by the date of any application, we consider it is unlikely that this notified item will be triggered.

We would expect companies to demonstrate the real change in unit rates above the 2003-04 level with actual invoices raised and payable by the company.

In addition, we expect companies to demonstrate that the final amount payable has been determined following a period of negotiation between the company and the controlling authority and the amount paid by the company represents best value.

F. LANE RENTAL AND TRAFFIC MANAGEMENT

At the 2004 Periodic Review, Ofwat set price limits assuming that there will be no change in the charges payable to highway authorities for occupying the highway. The Secretary of State for Transport his not approved any proposals to introduce charges payable to highway authorities for occupying the highway. As a result, this notified item would not be relevant for any interim determination applications in 2005.

G. INCREASES IN THE TAXATION OF INFRASTRUCTURE EXPENDITURE ARISING FROM THE INTRODUCTION OF IFRS

We do not believe this notified item will be relevant for interim determination applications in September 2005.

A number of companies have requested clarification on the treatment of tax for the purposes of calculating materiality as the current drafting in Condition B of the licence does not specifically address this point. For materiality purposes we intend to regard tax in a similar way to changes in operating costs and revenue (ie over fifteen years). We will make the necessary licence amendments to formally reflect this in time for 2006 Interim Determination decisions.

...........

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H. CONSTRUCTION PRICE INDEX

A few companies have clause RCC(4) in Condition B of the Licence. This allows for an interim determination arising from changes to the notified index if different from that assumed at the last periodic review. The notified index is the index of national construction costs (COPI) relative to the retail price index.

However, by September 2005, no complete charging year will have elapsed since price limits were set in December 2004, as required by Licence Condition B. As a result, it will not be possible to trigger RCC(4) in 2005-06.

I. ENHANCEMENT EXPENDITURE

1) New enhancement expenditure

We expect companies and others to have used the AMP4 change protocol (MD197) during the year. Any changes to enhancements included in the formal application for an IDoK must already have been confirmed using the principles and where appropriate the procedures set down. If this process has not been completed by 15 September the enhancement will not be considered at an IDoK this year.

2) Failure to deliver expected quality outputs on time

The DWI and the Environment Agency will report to us in June 2005 on your progress with delivering the quality outputs included at the 1999 Periodic Review, as amended by any subsequent interim determination for the AMP3 period.

In each of the cases below where changes are non-trivial we will consider whether to issue a counter-notice or trigger an interim determination under RCC(3).

- The Environment Agency reports each year on progress on the five—year National Environment Programme (NEP). If you have failed to deliver the expected outputs set down in the NEP and have not agreed changed priorities with the Environment Agency, we will take account of any shortfalls.
- The DWI will report on progress with improvements to treatment works to comply with regulations. We will take into account shortfalls in delivery from the programmes of work assumed when we last set price limits.

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> The DWI will also report on progress with delivering the programme of mains renovation started in 1989 to improve quality at the tap. If the milestones for the lengths of mains to be renovated have not been delivered to the satisfaction of the DWI, we will value the renovation not carried out. We will treat this as a shortfall.

> We will assess the change in revenue needed to deliver the outputs to the delivery dates now expected, compared with that assumed when we last set prices. We will value any change using the assumptions made when we last set price limits.

J. LICENCE TERMS

The following expressions set out in this letter are terms as defined in the licence (Condition B):

- refevant item
- charging year
- relevant change of circumstance
- notified item
- appropriate discount rate
- net present value
- annual allowable amount

PHILIP FLETCHER

(1) Where a number appears such as 13/4, the first one is the paragraph in the water companies' licences and the second is the number in the water and sewerage companies' licences.

ANNEX A

INTERIM DETERMINATIONS 2005 - INDICATIVE TIMETABLE

10 June June returns submitted for report year 2004-05.

May-July Company to submit change protocol requests to Ofwat for

approval/confirmation in time for inclusion in this year's

IDoK.

June/July/August Company/Ofwat/Reporter dialogue about scope and context

of potential interim determinations/supporting information.

August Company involves Reporter in preparation for submission/

supporting information.

No later than Company informs WaterVoice of potential IDoK application.

15 September

No later than Company completes change protocol procedures with Ofwat, 15 September guality regulators and Defra/Welsh Assembly Government.

15 September Company/Ofwat triggers an interim determination process.

Supporting information provided.

15 September Reporter's report submitted.

29 September Ofwat/company issues any counter-notices.

Sept/Oct Queries raised with companies and Reporters.

Working level meetings with companies.

3 November Draft interim determination issued to company and

published.

3-24 November Public consultation on draft interim determination.

17 November Company written response to draft interim determinations.

28 Nov - 2 Dec Representation meeting with Director and Ofwat senior staff.

No later than Final interim determination issued to company and

December 15 published.

Review of financial model by Ernst & Young LLP – letter to this Office	26
Appendix 12(A): Financial model to 2009–10	26
Appendix 12(B): Financial model to 2015–16	30



firmt & Young LEP 1 Many London Plant London SEL 2AF # Phone #2879512000 flow #287953-1345 CDF # EDF flox 241 www.commiss.

16 June 2005

Office of the Water Industry Commissioner for Scotland Ochil House Springkerse Business Park Stirling FK? 7XE

Direct Line: 020 7951 7891

Dear Sirs,

STRATEGIC REVIEW OF CHARGES 2006-10

REVIEW OF FINANCIAL MODEL

We have performed a detailed review of a financial model prepared by yourselves in connection with your Strategic Review of Charges 2006-10 and we are writing to confirm certain aspects of our review for inclusion in documents provided to support public consultation in relation to your Strategic Review of Charges 2006-10.

OUR REPORT

We provided our report to you dated 16 June 2005 in respect of the model, "V3.36 WICS SRC2006-10 Draft Determination.xls", date 13 June 2005, size 1,067 KB, ('the Review Model'). Our report was addressed to you and is available to Scottish Water and the Scottish Executive for information purposes, subject to conditions. Our report included no material unresolved issues in relation to the Review Model.

SCOPE OF OUR REVIEW

Our review was performed in accordance with our engagement letter of 2 June 2005, which detailed the scope and limitations to scope of our review. Our work focused on an assessment of the logical integrity and arithmetic of the Review Model under certain specified input configurations.

Our review did not include any independent investigations to assess the reliability of the assumptions included in the Review Model. Accordingly, our report does not provide comfort in relation to the validity of the assumptions.

RELIANCE ON OUR WORK

This letter is provided sofely for information purposes to inform parties interested in the basis of your strategic review of the broad nature and scape of the work we have performed on your behalf. This letter should not be used for any other purpose. We accept a responsibility to you alone for our review of the Review Model and we accept no responsibility to any other party.

Yours faithfully

Ernt & Young LLP

• The UK formignes is Young DUT is a larvier hability parametric registered in England, and Wales with registered number DL DOROT with a mendum pointing of Front & Young Global. A last of mendum for manners is a stabilitie too organisms of the Annie audience which is the larvier painting of Parameter and Richard paper and other.

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: General Assumptions

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
OPI		1.30%	1.45%	2.00%	2.00%	2.00%	2.00%	2.00%
CPI Index (Base year 2005-06)	95.40	96.63	98.04	100.00	102.00	104.04	106.12	108.24
COPI		5.46%	2.36%	3.00%	3.00%	3.00%	3.00%	3.00%
COPI Index (Base year 2005-06)	87.38	92.15	60'.26	100.00	103.00	106.09	109.27	112.55
Initial RCV (£m)				3,794				
Public Expenditure Limit (£m) *			516.9		182.0	182.0	182.0	182.0
Public Expenditure Target (£m)			160.0	165.5	124.6	148.0	218.2	270.6
Acceptable variation from Public Expenditure target				20%	20%	20%	20%	20%
Nominal Interest Rate Applicable to new debt			4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Nominal Return on Customer Retained Earnings					3.22%	3.22%	3.22%	3.22%
Optimal Gearing Ratio					65%	%59	%59	92%

(*) PEL in 2004-05 includes carry-over from previous years

KPI Tolerance Band	2002-03	2003-04	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Cash interest cover under tolerance					25 00%	25 00%	25 00%	25 NN%
adda isasa saisiiii					0,00.07	2,00	2/00:03	0,000
Cash interest cover lower tolerance					25.00%	25.00%	25.00%	25.00%
Adjusted cash interest cover upper tolerance					25.00%	25.00%	25.00%	25.00%
Adjusted cash interest cover lower tolerance					25.00%	25.00%	25.00%	25.00%

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Asset Data Entry

Total Planned Investment Q& S III and beyond (£ Million) (2005-06 prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Infrastructure Renewal Expenditure		0.0	86.0	86.0	86.0	86.0
Efficiency Target for IR						
Other Investment		0.0	186.5	441.1	493.1	526.0
Efficiency Target for OI						
Total Investment Programme (Current Prices)		0.0	272.5	527.1	579.1	612.0
Total Dannad Invastment Batail/Wholesale and Other (5 Million) (2005.06 nrices)	2004-05	2005-06	2008-07	2007-08	2008-00	2000-10
Total Tallied IIVestiller Tetall Wildesdie and Offici (£ Millor) (£005-00 prices)	204-02	00-002	ı	ı	ı	ı
Gross Capital Investment			7.6	8.2.8	6.0	0.5
Total planned investment			9.7	2.8	0.5	0.5
Planned Investment Q&S III and beyond (£ Million) (2005-06 prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short		0.0	12.1	28.6	32.0	34.1
Short		0.0	23.2	54.8	61.3	65.4
Medium		0.0	26.3	62.2	69.5	74.1
Medium long		0.0	15.5	36.8	41.1	43.8
Long		0.0	47.1	111.5	124.6	132.9
Infinite (land)		0.0	2.3	12.6	14.1	15.0
Infrastructure Renewals (Net of Grants)		0.0	0.98	0.98	86.0	86.0
Infrastructure Enhancement		0.0	6.99	134.7	150.6	160.6
Total		0.0	272.5	527.1	579.1	612.0
Check		Check	Check	Check	Check	Check
IRC Charge (£ Million) (2005-06 prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
IRC Charge	149.4	145.0	86.0	86.0	86.0	86.0
Retail/Wholesale and Other Capital Expenditure (2005-06 prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short			2.6	2.8	0.5	0.5
Short					-	
Medium		-			-	
Medium long			•			•
Long					•	
Infinite (land)					,	
Otal	•		7.6	2.8	0.5	0.5
Check		Check	Check	Check	Check	Check
Grants and Third Party contributions (2005-06 Prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						,
Short		1				
Medium						
Medium long	-	_		-	-	•
Long	2.1	2.5		•	1	•
Infinite (land)						
Infrastructure Enhancement		ı		ı	1	1
Total	2.1	2.5	1			

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Asset Data Entry

Gross asset disposals (current cost) (£ Million) (2005-06 prices)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						•
Short		2.0	2.0	2.0	2.0	2.0
Medium		1		1		ı
Medium long						ı
Long					-	1
Infinite (land)		1		1	1	1
Total		2.0	2.0	2.0	2.0	2.0
Gross asset disposals (historic cost) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						
Short	4.2	2.0	2.0	2.0	2.0	2.0
Medium		ı		1		ı
Medium long		ı		1		ı
Long				1		1
Infinite (land)		1	1	1	1	1
Total	4.2	2.0	2.0	2.0	2.0	2.0
Depreciation eliminated on disposals (current cost) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						
Short		1.0	1.0	1.0	1.0	1.0
Medium		-		_	-	-
Medium long		-	-	-	-	-
Long		-		-	-	1
Total		1.0	1.0	1.0	1.0	1.0
Depreciation eliminated on disposals (historic cost) (£ Million)	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Very Short					-	1
Short	2.9	1.0	1.0	1.0	1.0	1.0
Medium		-			-	1
Medium long		1		1	1	1
Long		-		-	-	1
Total	2.9	1.0	1.0	1.0	1.0	1.0
Annual Depreciation foregone by disposal of assets (current cost) (£ Million) (2005-06	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short					-	
Short		-		-	-	1
Medium						1

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Medium long

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Asset Data Entry

Annual Depreciation foregone by disposal of assets (historic cost) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short				i e	-	
Short						1
Medium						1
Medium long				·		
Long						
Total						
Opening MEAV 2006-07 (£ Million) (outturn prices)	Gross MEAV 1st April 2006	Net MEAV 1st April 2006	Check			
Very Short	50.6	34.1	TRUE			
Short	655.2	272.6	TRUE			
Medium	1,129.4	560.5	TRUE			
Medium long	234.6	152.8	TRUE			
Long	2,218.5	1,254.0	TRUE			
Infinite (land)	214.0	214.0	TRUE			
Infrastructure Assets	21,902.6	21,902.6	TRUE			
Total	26,405.0	24,390.6	TRUE			
Annual Depreciation Work in Progress commisioned after April 1st 2006-07 (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Depreciation (2005-06 Prices)	Gross book value	Net book value				
Closing Historic cost Fixed Assets 2003-04	(31/03/2004)	(31/03/2004)	Check			
Very Short	270.1	63.8	TRUE			
Short	37.5	27.8	TRUE			
Medium	522.2	383.5	TRUE			
Medium long	110.4	74.7	TRUE			
Long	1,724.3	1,502.9	TRUE			
Infinite (land)	28.8	28.8				
Infrastructure Assets	1,118.3	499.7				
Total	3,811.6	2,581.2				
Historic Cost Depreciation - (Base Assets 31/03/04)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	33.5	19.9	9.5	0.8	0.4	
Short	4.0	4.0	4.5	4.5		2.5
Medium	25.5	24.8	22.3	22.2	21.8	21.7
Medium long	3.3	3.2	3.2	3.2		2.3
Long	44.5	38.4	22.8	22.5		21.5
Total	110.7	80.3	62.1	53.2	20.0	48.1
Historic Cost Amortisation of Existing Grants (31/03/04)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
A constitution of Particular Constitution of Par	L	7 (C		
Amortisation of Existing Grants	2.5	2.4	2.4	2.4	2.4	

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Water Operating Costs (2005-06 prices)	2003-04	2004-05	2005-06	2006-07	2007-08	5008-03	2009-10
			200	0000	20 1002	2002	2
Base Operating Costs for the Water service (±m)	1/2.5						
New Jacions (outwitt management control) impacting base Operating Cost for Water Control (Co.)			C	7.7	C	10	101
New operating costs:			9.		3.6	7.00	7:01
DW Compliance (£m)				0.1	0.3	6.0	6.6
Abstraction Control Costs (£m)				,	,		
Growth (£m)				0.1	0.3	0.5	0.5
Security of Supply (£m)							
Improvement in the level of Customer Service (£m)				0.0	0.0	0.0	0.0
Efficiency Targets on Base Operating Costs (Cumulative)		8.46%	17.88%	18.25%	18.92%	19.64%	20.39%
Efficiency Targets on New Operating Costs (Cumulative)		%00.0	%00'0	11.19%	16.31%	21.13%	25.68%
Wastewater Operating Costs (2005-06 prices)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Base Operating Costs for the sewerage service (£m)	134.3						
New factors (outwith management control) impacting Base Operating Cost for Sewerage							
Service (£m)			0.5	2.9	2.9	2.9	2.9
New operating costs: Environmental Compliance (5m)				00	00	0.4	90
Growth (£m)				0.2	8:0	1.2	1.2
Improvement in the level of Customer Service (£m)		,		0.7	1.6	1.7	1.7
Efficiency Targets on Base Operating Costs (Cumulative)		8.40%	16.83%	16.61%	16.61%	16.61%	16.61%
Efficiency Targets on New Operating Costs (Cumulative)		%00:0	%00.0	%90.6	13.28%	17.31%	21.14%
PFI Contract Payment (£m)	115.4	113.2	117.0	120.0	120.0	122.0	125.5
PFI Efficiency Target (Cumulative)				%00.0	%00.0	%00.0	%00:0
Retail/Wholesale (2005-06 prices)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Operating Costs (£m)				4.0	2.5	2.0	1.5
Efficiency target (%) (Cumulative)		%00.0	%00.0	0.00%	%00.0	0.00%	0.00%
Adjustments to Cost of Capital (£m)				ı		1	
Enancial Inverte (9 Million)	2003-04	2004-05	9006.06	2006.07	90.7000	00.0000	0000
	10000	ı	2007	70-0007	2007-002	2000-03	2003-10
Exceptional Expenses (Income) (outturn)		52.5	3.5				
Dividends Payable in Year (outturn)		, 1	1 0	, ,	, 7	, 7	, ,
Income Received from sale of assets (outturn)		7.5	13.5	0. 0	0.0	0.0	0.1
DEIs accate transformed to convine contractors (Historic Post)		0.00	0.70	25.7	24.0	200	21.0
Amortisation of PET (Historic Cost)		0.00	5. 6.		- +	1.6	5 -
Creditors (Amounts falling due after more than one vear)		2 .	2 .		2 ,	2 .	2 .
		81.2	63.2	55.0	50.2	45.3	40.3
Balance Sheet Assumptions	2003-04	2004-05	2005-06	2009-07	2007-08	5008-09	2009-10
Trade Debtors (Days)		27.4	28.0	27.0	27.0	27.0	27.0
Stocks (% of Opex w/o PFI)		1.48%	1.50%	1.50%	1.50%	1.50%	1.50%
Prepayments and Accrued Income (% Revenue)		2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Other Debtors (% Revenue)		2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Trade & Capital Creditors (% of Capex)		25.60%	25.60%	25.60%	25.60%	25.60%	25.60%
Accruals, Payments received, taxes and social security (% Opex w PFI)		29.76%	28.00%	28.00%	28.00%	28.00%	28.00%

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Historic cost Balance Sheet:

£ Million	2003-04
Tangible Assets	2.581.2
Investments	0.1
Stocks	4.5
Trade Debtors	90.7
Prepayments and Accrued Income	51.0
PFI assets transferred to service contractors	38.8
Other Debtors	25.4
Total Debtors	205.9
Cash	10.6
Non-Government Loans (amounts falling due within one year)	12.7
Trade and Capital Creditors	102.8
Accruals, Payments received, taxes and social security	114.0
Other Creditors	31.0
Creditors (falling due within one year)	260.6
Other Creditors (amounts falling due after more than one year)	
Non-Government Loans (amounts falling due after one year)	41.6
Deferred Tax	48.7
Provisions for liabilities and charges	66.2
Deferred Income	17.6
Government Loans	2,138.5
Other Reserves	133.4
Post tax profit	9.09
Net retained earnings	34.9
Check	TDIIC

Historic cost Income and Expenditure

E MIIIION	2003-04
a	0
Revenue	958.3
Historic Asset Depreciation	119.0
Infrastructure Renewals Charge	143.0
Total Depreciation and Infrastructure Charges	262.0
Amortisation of Grants	1.0
Amortisation of PFI Assets	1.6
Revenue less Depreciation and Amortisation	695.7
Operating Costs	309.3
PFI Charge	111.5
Operating Profit	274.9
Interest Charges	136.6
Exceptional Expenses (Income)	52.8
Asset disposals	2.4
Pre-Tax Profit	87.9
Current Tax	
Deferred Tax	27.2
Total Tax	27.2
Dividend Payment	
Post tax profit	69.63
Check	TRUE

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Government Loans:

Government Loans rate band (Closing Value) £ Million	2003-04	
3%-3.99%	65.5	
4%-4.99%	802.2	
2%-5.99%	328.5	
%66.9-%9	136.4	
2%-7.99%	454.0	
%8%-8.99%	27.9	
%66'6-%6	166.9	
10%-10.99%	126.6	
11%-11.99%	28.3	
12%-12.99%	1.2	
13%-13.99%	6:0	
14%-14.99%	0.2	
Total Government Loans	2,138.5	
Government Loans Due for Repayment (£ Million)	2003-04	20
3%-3.99%		
4%-4.99%		
5%-5.99%		
%66'9-%9		
%66'2-%2		
%66.8-%8		

2007-08

Government Loans Due for Repayment (£ Million)	2003-04	2004-05	2005-06
3%-3:99%		35.5	
4%-4,99%		80.0	
5%-5.99%			
%66.9-%9		2.0	
2%-7.99%		15.0	
8%-8.99%			
%6:6-%6		10.3	
10%-10.99%		9.9	
11%-11.99%		0.2	
12%-12.99%		0.1	
13%-13.99%			
14%-14.99%		•	
Total Government Loans		152.7	

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Non - Government Loans:

Non Government Loans rate band (Closing Value) £ Million	2003-04
3%-3.99%	3.4
4%-4.99%	
5%-5.99%	0.1
%66'9-%9	
7%-7.99%	9.6
8%-8.99%	0.5
86.6-%6	•
10%-10.99%	39.2
11%-11.99%	0.5
12%-12.99%	1.0
13%-13.99%	
14%-14.99%	
Total Embedded Debt	54.3

Non-Government Loans Due for Repayment (£ Million)	2003-04	2004-05	20
3%-3:99%			
4%-4.99%			
5%-5.99%			
%66:9-%9			
7%-7.99%		1.7	
%8%-8.99%			
%66.6-%6			
10%-10.99%		11.1	
11%-11.99%			
12%-12.99%			
13%-13.99%			
14%-14.99%			
Total Non- Government Loans		12.7	

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10.7

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Quality and Standards II Input

Q&S II Investment (£ Million) (ALL IN 2005-06 prices)	2002-03	2003-04	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Very Short	42.2	37.9	19.0	14.8	3.0	0.5		÷
Short	11.2	9.9	45.3	9.69	27.1	3.6	1	ı
Medium	68.1	73.6	50.3	89.7	36.8	4.9	1	1
Medium long	14.4	15.6	36.4	55.1	26.4	3.6		ì
Long	137.6	148.5	124.6	175.0	82.4	10.2	1	ì
Infinite (land)	3.8	4.0	12.6	18.9	9.1	1.2	1	1
Infrastructure Renewals (Net of grants)		83.2	146.0	6.96	9.9	-		1
Infrastructure Enhancement	145.7	74.0	94.5	112.5	52.3	8.9		ì
Total	423.0	443.4	528.6	632.5	243.7	30.9		•

£ Millions (ALL IN 2005-06 Prices)	2002-03	2003-04	2004-05	2002-06	2006-07 2007-08 2008-09 2009-10	2007-08	2008-09	2009-10
Actual Spend (incl. Spend to Save capex and additional items)	423.0	443.4	528.6	632.5	243.7	30.9		
WIC18 Outputs Delivered (incl Spend to Save capex and additional items)	423.0	443.4	528.6	632.5	243.7	30.9		1
Assets purchased through Grant-in-aid (for inefficiency) (2005-06 prices)*	2002-03	2003-04	2004-05	2002-06	2006-07	2007-08	2007-08 2008-09	2009-10
Very Short								
Short								
Medium								
Medium Iong								
Long								
Infinite (land)								
Infrastructure Enhancement								
Total						1		1
Check					TRUE	TRUE	TRUE	TRUE

*NOTE: The information input is this table is a subset of the information in table "Grants and Third Party Contributions" located in the Asset Data Entry

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Tax Data Entry

Allocation New of capital expenditure for tax purposes	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Work in Progress (Opening Amount)	660.462	768.976	420.443	477.387	535.197	584.262
Total capitalised expenditure including IRE (outturn prices) excluding grants*	513.204	632.500	534.332	593.006	633.327	689.451
Percentage Transferred (Opening WIP + Capex)	34.48%	%00.02	20.00%	20.00%	20.00%	20.00%
WIP Transferred (£m)	404.690	981.033	477.387	535.197	584.262	636.857
Assets qualifying for 100% first year allowances	%00:0	%00.0	%00'0	0.00%	%00.0	0.00%
Assets to be included in the general (25%) pool	29.47%	43.28%	43.28%	43.28%	43.28%	43.28%
Assets qualifying for long life (6%) pool	32.49%	29.54%	29.54%	29.54%	29.54%	29.54%
Assets qualifying for Industrial Buildings Allowance	9.65%	%28.6	9.87%	9.87%	9.87%	9.87%
Assets purchased under finance leasing	%00:0	%00:0	%00'0	%00.0	%00'0	%00.0
Capitalised revenue expenditure deducted in year of spend	%00:0	%00:0	%00'0	%00.0	%00'0	%00.0
Capitalised revenue expenditure depreciated - non - infrastructure	%89'9	0.91%	0.91%	0.91%	0.91%	0.91%
Capitalised revenue expenditure depreciated – infrastructure	%00:0	%00:0	14.40%	14.40%	14.40%	14.40%
Capitalised revenue expenditure not depreciated	%00:0	%00:0	%00'0	%00.0	%00'0	%00.0
Other assets not qualifying for capital allowances or revenue deductions	21.72%	16.40%	2.00%	2.00%	2.00%	2.00%
Grants and contributions taxable on receipt	%00:0	%00:0	%00.0	0.00%	%00.0	%00.0
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Check (Items add up to 100%)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Check (Comparison with Investment summary sheet)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

* not taxable on receipt

Rates	2004-05	2005-06	2006-07	2007-08 2008-09	2008-09	2009-10
Tax Rate	30%	30%	30%	30%	30%	30%
Plant and Machinery Short life - less than 25 years - allowance rate (reducing balance)	25%	25%	25%	25%	25%	25%
Plant and Machinery Long life - more than 25 years - allowance rate (reducing balance)	%9	%9	%9	%9	%9	%9
Industrial Buildings Allowance rate (straight line)	4%	4%	4%	4%	4%	4%
Deductions for capital expenditure	2004-05	2005-06	2006-07	2007-08 2008-09	2008-09	2009-10
Existing IBA claims (Outturn)	13.9	13.9	14.0	13.9	14.0	14.0
Finance lease depreciation			1	1	ı	•
Depreciation on capitalised revenue expenditure – non – infrastructure (outturn) - Assets cap	9.8	,	1	1		'
Depreciation on capitalised revenue expenditure – infrastructure (outturn)	145.0	145.0	2.3	4.9	7.7	10.7
Capitalised revenue expenditure deducted in year of spend			1		1	
Amortisation of PFI assets	1.6	1.6	1.6	1.6	1.6	1.6
Average asset life – non - infrastructure	1.0	1.0	1.0	1.0	1.0	1.0
Average asset life – infrastructure	30.0	30.0	30.0	30.0	30.0	30.0

Opening position	2004-05
Opening pool of capital allowances – asset life < 25 years	563.2
Opening pool of capital allowances – asset life >= 25 years	593.1
Residual IBA's	241.4
General provisions – opening balance	265.7
Losses brought forward	143.0

2005-06 2006-07 2007-08

2004-05

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Asset Depreciation rates	Rate	Years				
Very Short	20%	2				
Short	10%	10				
Medium	2%	20				
Medium Iona	3%	40				
Long	5%	09				
Infinite	%0	luť.				
Infrastructure	%0	Inf.				
Opening gross book value value (£ million)	2004-05	2005-06	2006-07	2007-08	2008-09	200
Very Short	270.1	288.5	303.3	328.7	362.5	
Short	37.5	77.3	144.9	193.9	253.6	
Medium	522.2	571.0	2.099	724.6	795.4	
Medium long	110.4	145.7	200.8	243.2	285.8	
Long	1,724.3	1,847.3	2,024.8	2,155.7	2,284.2	
Infinite (land)	28.8	41.0	29.8	74.4	0.68	
Infrastructure Assets	1,118.3	1,351.8	1,561.2	1,767.4	2,008.3	
Total	3,811.6	4,322.6	4,955.6	5,487.9	6,078.9	
			٠	•	٠	Ш
Total Additions to Asset Base (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	
Very Short	18.4	14.8	25.5	33.8	35.5	
Short	44.0	9.69	20.9	61.8	6.99	
Medium	48.8	2.68	63.9	20.8	75.9	
Medium long	35.3	55.1	45.4	42.7	44.9	
Long	123.0	177.5	130.9	128.5	136.1	
Infinite (land)	12.2	18.9	14.6	14.6	15.4	
Infrastructure Renewals (net of grants)	141.8	6.96	95.2	91.2	94.0	
Infrastructure Enhancement (net of grants)	91.7	112.5	110.9	149.7	164.5	
Total	515.2	635.0	534.3	293.0	633.3	
Additions to Asset Base Q&S III and beyond (£ Million) - outturn prices	2004-05	2005-06	2006-07	2007-08	2008-09	200
Very Short		0.0	12.5	30.4	35.0	
Short		0.0	23.9	58.1	6.99	
Medium		0.0	27.1	629	75.9	
Medium long		0.0	16.0	39.0	44.9	
Long		0.0	48.5	118.3	136.1	
Infinite (land)		0.0	5.5	13.4	15.4	
Infrastructure Renewals (net of Grants)		0.0	988.6	91.2	94.0	
Infrastructure Enhancement		0.0	28.7	142.9	164.5	
Total		0.0	280.7	559.2	632.8	

39.0 73.6 83.4 49.3 149.6 16.9 96.8 180.8

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Additions to Asset Base Q&S II (£ Million) - outturn prices	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	18.4	14.8	3.0	0.5		
Short	44.0	9.69	27.1	3.6		٠
Medium	48.8	288.7	36.8	4.9		
Medium long	35.3	55.1	26.4	3.6		
Long	120.9	175.0	82.4	10.2		٠
Infinite (land)	12.2	18.9	9.1	1.2		
Infrastructure Renewals (net of Grants)	141.8	6.96	99			
Infrastructure Enhancement	91.7	112.5	52.3	6.8		
Total	513.2	632.5	243.7	30.9		1
Additions to Asset Base Retail/Wholesale & Others - outturn prices	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
			1001	٥٥	90	90
Obest			2.0	6:3	0.0	0.0
Madium						
Medium						
Medium long						
Long						
Infinite (land)				, (,	
Total			10.0	2.9	9.0	9.0
Assate added through grants in the report year - outling prings	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	1					1
Short						1
Medium	-					•
Medium long		•		•	•	•
Long	2.0	2.5				1
Infinite (land)						•
Infrastructure Enhancement	1					•
Total	2.0	2.5				
Disposals (historic cost basis) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						
Short	4.2	2.0	2.0	2.0	2.0	2.0
Medium						•
Medium long	-	-			1	1
Long						•
Infinite (land)						•
Total	4.2	2.0	2.0	2.0	2.0	2.0
Cumulative depreciation as at 1st April	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Very Short	206.3	241.6	266.7	285.1	301.0	323.4
Short	9.7	13.0	23.9	41.4	64.4	93.4
Medium	138.7	165.4	194.9	225.7	259.8	297.1
Medium long	35.7	39.5	44.3	20.3	57.3	64.6
Long	221.4	266.9	308.8	337.7	368.5	400.5
Infrastructure Assets (IRC)	618.6	763.6	9.808	997.2	1,088.5	1,182.4
						١

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Depreciation on base assets (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	33.5	19.9	9.5	8.0	0.4	٠
Short	4.0	4.0	4.5	4.5	4.0	2.5
Medium	25.5	24.8	22.3	22.2	21.8	21.7
Medium long	3.3	3.2	3.2	3.2	2.3	2.3
Long	44.5	38.4	22.8	22.5	21.5	21.5
Total	110.7	8.06	62.1	53.2	20.0	48.1
Depreciation- on asset additions	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	1.8	5.2	9.5	15.1	22.1	27.7
Short	2.2	7.9	13.9	19.5	26.0	33.0
Medium	1.2	4.7	8.5	11.9	15.6	19.5
Medium long	0.4	1.6	2.8	3.9	4.9	6.1
Long	1.0	3.5	6.1	8.3	10.5	12.8
Total	6.7	22.8	40.5	58.7	79.0	99.2
Depreciation (eliminated on disposal) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short				,		
Short	2.9	1.0	1.0	1.0	1.0	1.0
Medium						
Medium long					•	
Long						
Total	2.9	1.0	1.0	1.0	1.0	1.0
Depreciation (foregone on asset disposal) (£ Million)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short						
Short						
Medium						
Medium long				-	-	
Long					-	
Total	1	•	•	1	1	·
Depreciation charge for the year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	35.3	25.1	18.4	15.9	22.4	27.7
Short	6.2	11.9	18.4	24.0	30.0	35.6
Medium	26.7	29.5	30.8	34.0	37.4	41.3
Medium long	3.8	4.8	0.9	7.1	7.2	8.4
Long	45.5	41.9	28.9	30.8	32.0	34.3
Total	117.5	113.2	102.6	111.8	129.0	147.3
Infrastructure Renewals Charge	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
IRC	145.0	145.0	88.6	91.2	94.0	8.96

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Closing Net Book Value (£ Million)	2004-05	2005-06	2006-07	2007-00	50007	01-6002
Very Short	46.9	36.6	43.6	61.5	74.7	86.0
Short	64.3	121.0	152.5	189.3	225.2	262.2
Medium	405.6	465.8	498.9	535.7	574.2	616.4
Medium long	106.3	156.5	192.9	228.5	266.2	307.1
Long	1,580.4	1,716.0	1,818.0	1,915.7	2,019.9	2,135.1
Infinite (land)	41.0	29.8	74.4	0.68	104.4	121.3
Infrastructure Assets	588.2	652.6	770.1	919.9	1,084.4	1,265.2
Total	2,832.6	3,208.4	3,550.6	3,939.5	4,348.8	4,793.2
Historic Cost Amortisation of Fyisting Grants						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Amortisation of Existing Grants (31/03/2004)	2.5	2.4	2.4	2.4	2.4	
New Grants						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short	-	,	,		•	
Short	1	1	1	1		
Medium						
Medium long	-	1	•	-	-	1
Long	2.0	2.5	•	•	1	'
Infinite (land)	1	•	•	•	•	
Infrastructure Enhancement		•	•	•	•	'
Total New Grants	2.0	2.5	•	1	1	1
Historic Cost Amortisation of New Grants						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Very Short		•	•	•	•	
Short	1					
Medium	-	1	1	-	1	1
Medium long	1	1	1	•	1	
Long	0.0	0.1	0.1	0.1	0.1	0.1
Infinite (land)	1	1	1	•	1	'
Total Amortisation of New Grants	0.0	0.1	0.1	0.1	0.1	0.1
Total Historic Cost Amortisation of New and Existing Grants						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Amortisation of Grants	2.5	2.5	2.5	2.5	2.5	0.1
Deferred Income in HC Accounts	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Deferred Income Opening Amount	17.6	17.1	17.1	14.7	12.2	9.7
Additions on year	2.0	2.5				
Amortisation	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(0.1)
Deferred Income (Closing amount)	17.1	17.1	14.7	12.2	9.7	9.6

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Gloss Asset cost at 1st April (current cost) (2 million)	2006	2007	2008	2009
Very Short	50.6	77.6	113.7	152.7
Short	655.2	723.8	805.1	894.0
Medium	1,129.4	1,227.2	1,334.8	1,450.8
Medium long	234.6	284.0	335.2	390.2
Long	2.218.5	2.416.0	2.617.0	2.831.6
infinite (land)	214.0	235.0	256.6	279.7
nfrastructure Assets	21,902.6	22,765.8	23,689.8	24,659.0
Total	26,405.0	27,729.5	29,152.2	30,657.9
Total Additions to Asset Base (£ Million) - outturn prices	2006-07	2007-08	2008-09	2009-10
John Short	25.5	33.8	35 5	0 08
Short	20.2	0.00 8.10	0.00	73.6
Medium	0.00	20.02	75.9	83.4
Medium Iona	42.4	42.7	44.9	49.3
Tona	130.9	128.5	136.1	149.6
Infinite (land)	14.6	14.6	15.4	16.9
nfrastructure Renewals (net of Grants)	95.2	91.2	94.0	8.96
nfrastructure Enhancement	110.9	149.7	164.5	180.8
Total	534.3	593.0	633.3	689.5
Disposals (2005-06 prices) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short				
Short	2.0	2.0	2.0	2.0
Medium	٠			
Medium long		-		
Long	•	1		•
Infinite (land)				
Total	2.0	2.0	2.0	2.0
Disposals (Revaluation) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short				'
Short	0.1	0.1	0.2	0.3
Medium				
Medium long		-		
Long				•
Infinite (land)		•	•	•
Total	0.1	0.1	0.2	0.3
Cost Revaluation in the year (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	1.5	2.3	3.4	4.6
Short	19.7	21.7	24.2	26.8
Medium	33.9	36.8	40.0	43.5
Medium long	7.0	8.5	10.1	11.7
Long	9.99	72.5	78.5	84.9
nfinite (land)	6.4	7.0	7.7	8.4
Infrastructure Assets	657.1	683.0	710.7	739.8
Total	792.2	831.9	874.6	919.7
Cost Revaluation Cumulative	792.2	1,624.0	2,498.6	3,418.3

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Cumulative Depreciation as at 1st April (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	787	33.6	57.7	808
Short	382.7	451.8	530 5	620.0
Modified Williams	0.00	0.100	0.00	0.50.0
Medium	2003.9	040.3	7.83.7	821.3
Medium long	81.8	95.6	105.2	119.4
Long	964.5	1,037.6	1,116.4	1,201.2
Infrastructure Assets (IRC)		9.88	182.5	281.9
WIP adjustment		-		
Total	2,014.5	2,261.0	2,539.0	2,844.7
Current Cost Depreciation- Charge in the year excluding WIP (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	16.6	23.1	23.4	24.0
Short	58.7	66.2	74.7	84.0
Medium	59.3	64.5	70.2	76.3
Medium long	8.4	9.7	11.1	12.7
Long	44.1	47.7	51.3	55.3
Wip Adjustment		•	•	•
Total	187.2	211.2	230.7	252.3
Depreciation (eliminated on disposal) (£ Million) - (2005-06 prices)	2006-07	2007-08	2008-09	2009-10
Von Chart				
Vely Short				
Madium	2:	0.	2:	0.
Madium loos				
Lorig Total	0.	0.1	0	0.1
			2	
Depreciation (revaluation eliminated on disposal) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short				
Short	0.0	0.1	0.1	0.1
Medium		1		1
Medium long				
Long		-		•
Total	0.0	0.1	0.1	0.1
Depreciation Revaluation (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	0.5	1.0	1.7	2.5
Short	11.5	13.6	15.9	18.6
Medium	17.1	19.4	21.9	24.6
Medium long	2.5	2.8	3.2	3.6
Long	28.9	31.1	33.5	36.0
Infrastructure Assets (IRC)		2.7	5.5	8.5
Total	60.4	20.2	81.6	93.8
Cumulative Depreciation Revaluation	60.4	130.9	212.6	306.4

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Infrastructure Renewals Charge (IRC) (£ Million) (Outturn)	2006-07	2007-08	2008-09	2009-10
IRC	88.6	91.2	94.0	96.8
Net Book Value (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	44.0	26.0	6.69	87.0
Short	272.0	274.7	274.1	270.7
Medium	581.9	902.6	629.5	655.5
Medium long	191.4	230.0	270.7	315.5
Long	1,378.4	1,500.6	1,630.4	1,773.6
Infinite (land)	235.0	256.6	279.7	305.0
Infrastructure Assets	22,677.3	23,507.3	24,377.0	25,289.1
WIP adjustment				
Total	25,379.8	26,430.8	27,531.3	28,696.5

New Grants* (outturn prices)	2006-07	2007-08	2008-09	2009-10
Very Short				
Short				
Medium		-	•	
Medium long				
Long				
Infinite (land)			•	
Infrastructure Enhancement		-	•	
Total New Grants		-		
* All grants pravious to 1st April 2006 are considered as part of the MEAV value				

* All grants previous to 1st April 2006 are considered as part of the MEAV value

	2006-07	2007-08	2008-09	2009-10
Very Short				1
Short				
Medium				
Medium long				1
Long				
Infinite				
Infrastructure Enhancement				
Total				

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Cumulative Amortisation of new grants (Current Cost)	2006-07	2007-08	2008-09	2009-10
Very Short				
Short				٠
Medium				
Medium long				
Long				
Infinite (land)				•
Infrastructure Assets				
Total				
Total Amortisation of Grants (Current Cost)	2006-07	2007-08	2008-09	2009-10
Total Amortisation of Grants	-	-	-	
Deferred Income and Current Cost Reserve	2006-07	2007-08	2008-09	2009-10
Deferred Income Opening Amount				
Deferred Income Opening Amount (Revalued portion)				
Additions on year				
Amortisation				•
Deferred Income (Closing amount)		-	-	•
Impact on Current Cost Reserve	1	1	1	•

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: MEAV Depreciation

Reported MEAV for Scottish Water (£ Million) April 1st 2006

24,390.6

	0	% ber	£m ber
Current assets	Annual Rate category	_	category
Very Short	20.0%	%0	34.1
Short	10.0%	1%	272.6
Medium	2.0%	2%	560.5
Medium long	2.5%	1%	152.8
Long	1.7%	2%	1,254.0
Infinite (Land)	%0:0	1%	214.0
nfrastructure	%0:0	%06	21,902.6
	Total	100.0%	24,390.6
	Check	TRUE	

Asset Additions (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	25.5	33.8	35.5	39.0
Short	20.9	61.8	6.99	73.6
Medium	63.9	70.8	75.9	83.4
Medium long	42.4	42.7	44.9	49.3
Long	130.9	128.5	136.1	149.6
Total	313.6	337.5	329.5	395.0
Depreciation on existing assets (Base year: 2005) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	13.6	13.6	8.9	
Short	54.5	54.5	54.5	54.5
Medium	26.0	26.0	26.0	26.0
Medium Iona	76	7.6	7.6	7 6

	0.00	0.00	0.00	0.00
Medium long	9.7	9.7	9.7	7.6
Long	41.8	41.8	41.8	41.8
Total	173.6	173.6	166.8	160.0
Depreciation foregone by the disposal of assets (mhc) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	,			
Short		1		
Medium			-	
Medium long	-		-	
Long		1		
Total				

Depreciation on existing assets (revalued) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	14.0	14.5	7.4	
Short	56.2	57.8	9.69	61.4
Medium	27.7	59.5	61.2	63.1
Medium long	7.9	8.1	8.3	9.8
	43.1	44.3	45.7	47.0
Total	178.8	184.2	182.3	180.1

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: MEAV Depreciation

Depreciation on additions in the year (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	2.5	3.4	3.6	3.9
Short	2.5	3.1	3.3	3.7
Medium	1.6	1.8	1.9	2.1
Medium long	0.5	0.5	9.0	9.0
Long	1.1	1.1	1.1	1.2
Total	8.3	8.6	10.5	11.5
Annual depreciation on additions in period (revalued) (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	2.5	8.6	15.9	24.0
Short	2.5	8.3	15.1	22.7
Medium	1.6	5.1	8.9	13.2
Medium long	0.5	1.6	2.8	4.1
Long	1.1	3.3	5.7	8.2
Total	8.3	27.0	48.4	72.2
WIP adjustment (Depreciation on assets commissioned after 1st April 2006)	2006-07	2007-08	2008-09	2009-10
Depreciation				
Current Cost Annual Depreciation Charge (£ Million)	2006-07	2007-08	2008-09	2009-10
Very Short	16.6	23.1	23.4	24.0
Short	58.7	66.2	74.7	84.0
Medium	59.3	64.5	70.2	76.3
Medium long	8.4	9.7	11.1	12.7
Long	44.1	47.7	51.3	55.3
Total CCD before WIP adjustment	187.2	211.2	230.7	252.3
WIP adjustment		•	1	1
Total	187.2	211.2	230.7	252.3

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Interest Payable

Embedded Debt Government & Non Government (£ Million)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
3%-3.99%		689	33.4	30.0	25.0	15.0	(0.0)
4%-4.99%		802.2	722.2	702.2	692.2	667.2	634.7
5%-5.99%		328.6	328.6		328.5	323.5	323.5
%66.9-%9		136.4	131.4	131.4	131.4	131.4	129.4
<u>7%-7.99%</u>		463.6	446.9	435.2	408.5	406.6	404.7
8%-8.99%		28.4	28.4	28.4	28.4	28.4	28.4
%66.6-%6		166.9	156.6	146.5	138.4	127.7	122.4
10%-10.99%		165.8	148.2	133.4	125.0	114.6	96.7
11%-11.99%		28.8	28.6	17.9	17.3	12.3	6.9
12%-12.99%		2.2	2.1	2.1	2.1	2.1	1.0
13%-13.99%		6.0	6.0	6.0	0.2	0.2	0.2
14%-14.99%		0.2	0.2	0.2	0.2	0.2	0.2
Total Embedded Debt		2,192.8	2,027.4	1,956.6	1,897.0	1,829.0	1,747.9
Embedded Debt Due for Repayment (£ Million)	2003-04	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
3%-3.99%		35.5	3.4	5.0	10.0	15.0	·
4%-4.99%		0.08	20.0	10.0	25.0	32.5	15.0
5%-5.99%		1	0.1	-	2.0	1	22.9
%66.9-%9		5.0	1		1	2.0	3.0
7%-7.99%		16.7	11.7	26.8	1.8	1.9	10.7
8%-8.99%							
%66.6-%6		10.3	10.1	8.1	10.8	5.3	0.3
10%-10.99%		17.6	14.8	8.4	10.4	17.9	14.0
11%-11.99%		0.2	10.7	9.0	2.0	5.5	0.4
12%-12.99%		0.1	0.0	-	1	1.1	1
13%-13.99%		-	•	0.7	-		
14%-14.99%		-		-	-	-	-
Total		165.4	70.9	59.6	0.89	81.1	66.4
Repayment by type (£ Million)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Government Loans		152.7	60.2		61.4	73.1	63.5
Non Government Loans		12.7	10.7			8.0	2.9
Total		165.4	70.9		0.89	81.1	66.4
Check		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Interest Payable

Interest Payable on Embedded Debt (£ Million)	Avg. Rate	2002-05	2002-06	2006-07	2007-08	2008-09	2009-10
3%-3.99%	3.50%	1.8	1.1	1.0	0.7	0.3	(0.0)
4%-4.99%	4.50%	34.3	32.0	31.4	30.6	29.3	28.2
2%-5.99%	2.50%	18.1	18.1	18.1	17.9	17.8	17.2
%66-9-%9	6.50%		8.5	8.5	8.5	8.5	8.3
7%-7.99%	7.50%	34.1	33.1	31.6	30.6	30.4	30.0
8%-8.99%	8.50%	2.4	2.4	2.4	2.4	2.4	2.4
%66.6-%6	9.50%	15.4	14.4	13.5	12.6	11.9	11.6
10%-10.99%	10.50%	16.5	14.8	13.6	12.6	11.1	9.4
11%-11.99%	11.50%	3.3	2.7	2.0	1.7	1.1	0.8
12%-12.99%	12.50%	0.3	0.3	0.3	0.3	0.2	0.1
13%-13.99%	13.50%	0.1	0.1	0.1	0.0	0.0	0.0
14%-14.99%	14.50%	0.0	0.0	0.0	0.0	0.0	0.0
Total Interest Payable on Embedded Debt		135.0	127.5	122.5	118.0	113.0	108.0
Interest Rate	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Interest rate		4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Cost of Capital Adjustment	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Cost of Debt (pre-tax) for cost of capital calculations				4.60%	4.60%	4.60%	4.60%
				88.63	85.70	82.27	78.88
Difference with actual interest payable				33.84	32.26	30.70	29.15
New Debt Assumed (£ Million)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
New Debt Required		260.8	236.4	184.1	216.0	299.3	337.0
Interest	2003-04	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Interest Payable on New Debt (before iterations)		-	12.0	22.9	31.3	41.3	55.0
Interest Payable on New Debt (iterations only)		6.0	5.4	4.2	4.6	6.3	7.4
Cumulative Interest on New Debt		6.0	17.4	27.1	36.0	47.5	62.5
Interest before tax adjustment		141.0	145.0	149.6	153.9	160.5	170.5
Adjustments due to tax changes				-	•	-	
Total Interest Payable		141.0	145.0	149.6	153.9	160.5	170.5
Iterations to calculate new debt required (£ Million)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
New debt before rolled up interest (before tax)		(254.8)	(231.0)		(195.9)		(314.8)
Iteration to infinity		(260.8)	(236.4)	(184.1)	(200.5)	(272.5)	(322.3)

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Cost of Capital

Cost of Capital Calculation

	2006-07	2007-08	2008-09	2009-10
Cost of Debt (pre tax)*	4.60%	4.60%	4.60%	4.60%
Cost of Equity	3.22%	3.22%	3.22%	3.22%
Gearing ratio	62.00%	%00.59	%00:59	62.00%
WACC	4.12%	4.12%	4.12%	4.12%
Cost of Capital (before adjustments)	151.7	166.0	181.6	198.5
Adjustments due to Embedded Debt (£m)	33.8	32.3	30.7	29.1
Adjustments due to Retail/Wholesale Competition Cost of Capital (£m)				
Cost of Capital (£m)	185.50	198.22	212.27	227.66
Cost of Capital (%)	2.04%	4.92%	4.81%	4.72%

* Cost of Debt is entered pre-tax to prevent double counting of the tax shield in the revenue requirement

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Calculation of RCV

£ Million	2005-06	2006-07	2007-08	2008-09	2009-10
Opening RCV	3,794.4				
Closing RCV (previous year)		3,519.8	3,847.8	4,214.3	4,606.1
Indexation		70.4	0.77	84.3	92.1
Opening RCV	3,794.4	3,590.2	3,924.7	4,298.6	4,698.3
Capital Expenditure		439.1	501.8	539.4	592.7
Non-Infrastructure Assets		328.2	352.0	374.8	411.9
Infrastructure Enhancement		110.9	149.7	164.5	180.8
Infrastructure Renewals Expenditure		95.2	91.2	94.0	8.96
Grants and Contributions		-	-		
Depreciation		187.2	211.2	230.7	252.3
Depreciation		187.2	211.2	230.7	252.3
Depreciation of Capital Grants(*)		-			
Infrastructure Renewals Charge		988.6	91.2	94.0	8.96
Disposal of Assets		1.0	1.1	1.1	1.1
Outperformance of regulatory assumptions	(274.5)				
Closing RCV	3,519.8	3,847.8	4,214.3	4,606.1	5,037.5
Average Year RCV		3,683.8	4,031.0	4,410.2	4,821.8

(*) Capital Grants starting from 2006-07, earlier capital is included in the RCV

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Operating Costs

£ Millions	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Water							
Base Operating Cost (2005-06 prices)	172.5	172.5	172.5	172.5	172.5	172.5	172.5
Permanent Changes to Base Operating Cost (2005-06 prices)			3.0	7.7	9.5	10.7	10.7
Revised Total Base Operating Cost (2005-06 prices)	172.5	172.5	175.5	180.3	181.7	183.3	183.3
Inflation Adjustment to Base Operating Cost	(5.8)	(3.4)		3.6	7.3	11.2	15.1
Less: Efficiency Target		14.6	31.4	32.9	34.4	36.0	37.4
Less: Inflation Increment on Efficiency Target		(0.3)		0.7	1.4	2.2	3.1
Sub Total (outturn)	166.7	154.8	144.1	150.3	153.3	156.3	157.9
New Operating Costs Relating to:							
- the Quality Enhancement Programme (2005-06 prices)		,		0.1	0.3	6.0	9.9
- growth (2005-06 prices)				0.1	0.3	0.5	0.5
- security of supply (2005-06 prices)				1			
- abstraction control costs (2005-06 prices)		,					
- enhanced levels of customer service (2005-06 prices)				0.0	0.0	0.0	0.0
Allowable New Operating Costs (2005-06 prices)				0.2	9.0	1.5	7.1
Inflation Adjustment to New Operating Costs				0.0	0.0	0.1	9.0
Less: Efficiency Target				0.0	0.1	0.3	1.8
Less: Inflation Increment on Efficiency Target				0.0	0.0	0.0	0.2
Sub Total (outturn prices)	-	,		0.2	9.0	1.2	5.7
Total Water Operating Costs (outturn)	166.7	154.8	144.1	150.5	153.8	157.5	163.6

Sewerage							
Base Operating Cost (2005-06 prices)	134.3	134.3	134.3	134.3	134.3	134.3	134.3
Permanent Changes to Base Operating Cost (2005-06 prices)		,	0.5	2.9	2.9	2.9	2.9
Revised Total Base Operating Cost (2005-06 prices)	134.3	134.3	134.8	137.1	137.1	137.1	137.1
Inflation Adjustment to Base Operating Cost	(4.5)	(5.6)		2.7	5.5	8.4	11.3
Less: Efficiency Target		11.3	22.7	22.8	22.8	22.8	22.8
Less: Inflation Increment on Efficiency Target		(0.2)		0.5	6.0	1.4	1.9
Sub Total (outturn)	129.7	120.6	112.1	116.6	119.0	121.3	123.8
New Operating Costs Relating to:							
- the Quality Enhancement Programme (2005-06 prices)				0.0	0.0	4.0	2.6
- growth (2005-06 prices)				0.2	0.8	1.2	1.2
- enhanced levels of customer service (2005-06 prices)		,		0.7	1.6	1.7	1.7
Allowable New Operating Costs (2005-06 prices)				6.0	2.4	3.4	5.5
Inflation Adjustment to New Operating Costs				0.0	0.1	0.2	0.5
Less: Efficiency Target		,		0.1	0.3	9.0	1.2
Less: Inflation Increment on Efficiency Target				0.0	0.0	0.0	0.1
Sub Total (outturn)				6.0	2.2	3.0	4.7
Total Sewerade Operating Costs (outturn)	129.7	120.6	112.1	117.5	121.1	1243	128.5

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Operating Costs

Retail/Wholesale	2003-04	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
R/W Operating Cost (2005-06 prices)		,		4.0	2.5	2.0	1.5
Inflation Adjustment to R/W Operating Costs				0.1	0.1	0.1	0.1
Less: Efficiency Target on R/W Operating Costs							
Less: Inflation Increment on Efficiency Target on R/W Op. Costs		1		٠			
Total Retail/Wholesale Operating Costs (outturn)				4.1	2.6	2.1	1.6
Operating Costs (excluding Depreciation and Amortisation) (outturn)	296.5	275.4	256.2	272.1	277.6	283.9	293.8

PFI Charge

Retail/Wholesale	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
PFI Charge (2005-06 prices)	115.4	113.2	117.0	120.0	120.0	122.0	125.5
Inflation Adjustment to PFI Charge	(3.9)	(2.2)		2.4	4.8	7.5	10.3
Less: Efficiency Target on PFI					-		
Less: Inflation Increment on Efficiency Target on PFI				-	-		1
Total PFI Charge (outturn)	111.5	111.0	117.0	122.4	124.8	129.5	135.8

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Reserve

Initial Current Cost Reserve	
	2005-06
Opening MEAV 1 April 2006	24,390.6
Closing NBV Fixed Assets (Net of grants)	3,191.3
Initial Current Cost Reserve (2006-07)	21,199.3

	90-5002				
Opening MEAV 1 April 2006	24,390.6				
Closing NBV Fixed Assets (Net of grants)	3,191.3				
Initial Current Cost Reserve (2006-07)	21,199.3				
Changes in Current Cost Reserve					
	2005-06	2006-07	2007-08	2008-09	ш
					П
Opening Current Cost Reserve		21,199.3	21,926.1	22,681.8	
Fixed Assets Adjustments		731.7	761.4	792.9	
Working Capital Adjustments		(2.8)	(2.4)	(2.7)	
Financing Adjustments		(3.1)	(4.4)	(5.3)	
PFI Assets adjustments		1.1	1.1	1.0	
Grants and Third Party Contributions Adjustments				1	
Current Cost Reserve		21,926.1	22,681.8	23,467.8	

	2005-06	2006-07	2007-08	2008-09	2009-10
Stocks	3.8	4.1	4.2	4.3	4.4
Trade Debtors	72.1	72.4	73.7	75.4	75.7
Prepayments and Accrued Income	51.0	53.1	54.0	55.3	55.5
Short-term Trade and Capital Creditors	162.6	136.8	151.8	162.1	176.5
Accruals, Payments received in advance, taxes and social security	104.5	110.5	112.7	115.8	120.3
Total Working Capital	(140.1)	(117.7)	(132.6)	(142.9)	(161.2)
Total Working Capital Adjustment (Inflation times opening amount)		(2.8)	(2.4)	(2.7)	(2.9)

	2005-06	2006-07	2007-08	2008-09	2009-10
Net Assets Employed	24,058.0	25,008.3	25,996.3	27,061.2	28,177.1
Net Operating Assets (excluding PFI assets)	24,214.9	25,227.1	26,263.8	27,354.6	28,502.3
Difference	(156.9)	(218.8)	(267.5)	(293.4)	(325.2)
Total Financing Adjustment (Inflation times opening amount)		(3.1)	(4.4)	(2.3)	(6.9)

Grants and Third Party Contributions

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Water Industry Commissioner for Scotland Financial Model - Water Industry Commissioner for Scotland Process Sheet: Capital Allowances

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	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Plant and Machinery Short life - less than 25 years - allowance rate (reducing balance)	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
Plant and Machinery Long life - more than 25 years - allowance rate (reducing balance)	%00'9	%00'9	%00'9	%00'9	%00'9	%00'9
Industrial Buildings Allowance rate (straight line)	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Apportionments of Capital expenditure						
	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Work in Progress (Opening Amount)	660.46	768.98	450.44	477.39	535.20	584.26
Total capitalised expenditure including IRE (outturn prices) excluding grants*	513.20	632.50	534.33	593.01	633.33	689.45
Percentage Transferred (Opening WIP + Capex)	34.48%	%00.07	20.00%	20.00%	20.00%	50.00%
WIP Transferred (£m)	404.69	981.03	477.39	535.20	584.26	636.86
Assets qualifying for 100% first year allowances	%00'0	0.00%	0.00%	%00'0	0.00%	0.00%
Assets to be included in the general (25%) pool	29.47%	43.28%	43.28%	43.28%	43.28%	43.28%
Assets qualifying for long life (6%) pool	32.49%	29.54%	29.54%	29.54%	29.54%	29.54%
Assets qualifying for Industrial Buildings Allowance	9.65%	9.87%	9.87%	9.87%	9.87%	9.87%
Assets Purchased under finance leasing	%00:0	0.00%	0.00%	%00'0	0.00%	0.00%
Capitalised revenue expenditure deducted in year of spend	%00:0	0.00%	0.00%	%00'0	0.00%	0.00%
Capitalised revenue expenditure depreciated - non infrastructure	%89'9	0.91%	0.91%	0.91%	0.91%	0.91%
Capitalised revenue expenditure depreciated - infrastructure	%00:0	0.00%	14.40%	14.40%	14.40%	14.40%
Capitalised revenue expenditure not depreciated	%00:0	0.00%	0.00%	%00'0	0.00%	0.00%
Other assets not qualifying for capital allowances or revenue deductions	21.72%	16.40%	2.00%	2.00%	2.00%	2.00%
Grants and Contributions taxable on receipt	0.00%	%00.0	0.00%	%00'0	%00'0	0.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00% 100.00% 100.00%	100.00%

100% Allowances or Capital expenditures deducted from trading profit

2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |

Short lite assets (25%) pool	2004-05	2005-06	2006-07	2004-05 2005-06 2006-07 2007-08 2008-09	2008-09	2009-10
Opening Balance	563.2	511.8	702.3	681.7	685.0	703.4
Additions	119.2	424.6	206.6	231.6	252.9	275.6
Allowances	170.6	234.1	227.2	228.3	234.5	244.8
Closing Balance	511.8	702.3	681.7	685.0	703.4	734.3

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Water Industry Commissioner for Scotland Financial Model - Water Industry Commissioner for Scotland Process Sheet: Capital Allowances

Long Life Assets (6%) pool

	2004-05	2004-05 2005-06	70-9002	2007-00	2008-09	01-6002
Opening Balance	593.1	681.1	912.6	990.4	1,079.6	1,177.1
Additions	131.5	289.8	141.0	158.1	172.6	188.1
Allowances	43.5	58.3	63.2	6.89	75.1	81.9
Closing Balance	681.1	912.6	990.4	1,079.6	1,177.1	1,283.3
Industrial Buildings (straight line)						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
IBA claims (Base year 2003-04)	13.9	13.9	14.0	13.9	14.0	14.0
New IB assets	39.0	8.96	47.1	52.8	57.7	62.9
Allowances on new IBA assets	1.6	5.4	7.3	9.4	11.7	14.3
Total Industrial Building Allowances	15.5	19.3	21.3	23.3	25.7	28.3
Total Capital Allowances (incl. IBA)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Allowances	229.5	311.7	311.8	320.6	335.3	354.9
Capitalised Revenue Expenduture: Non-Infrastrure Assets	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Opening Non-Infrastructure Assets (capitalised after 31/03/04)		27.0	8.9	4.3	4.9	5.3
Depreciation of new capitalised Assets		-27.0	-8.9	-4.3	-4.9	-5.3
Capital Additions	27.0	8.9	4.3	4.9	5.3	5.8
Closing Capitalised Non-Infrastructure Assets	27.0	8.9	4.3	4.9	5.3	5.8
Summore of Dansaciation Calculations for Canifalisad Bauanua Evnanditura. M	2004-05	2005-06	2006-07	2007-08	2008-00	2009-10
odilliary of Depreciation Calcarations for Capitalised Heverlag Experiation in					41	
Non-Infrastructure: Depreciation of capitalised Assets (capitalised before 31/03/04)	-9.8	0.0	0.0	0.0	0.0	0.0
Non-Infrastructure: Depreciation of capitalised Assets (capitalised after 31/03/04)	0.0	-27.0	-8.9	-4.3	-4.9	-5.3
Total Depreciation	8.6-	-27.0	-8.9	-4.3	-4.9	-5.3

Depreciation of Capitalised revenue Expenditure - Non Infrastructure Assets	2004-05	2005-06	2006-07	2004-05 2005-06 2006-07 2007-08	2008-09	2009-10
Capital Additions	27.03	8.93	4.34	4.87	5.32	5.79
2004-05		27.0	0.0	0.0	0.0	0.0
2005-06			8.9	0.0	0.0	0.0
2006-07				4.3	0.0	0.0
2007-08					4.9	0.0
2008-09						5.3
2009-10						
Total		27.0	8.9	4.3	4.9	5.3

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Tax Calculations

Corporation Tax Assumptions

30% 30%		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
lation (before losses brought forward)* offt charge scharge scharge table	Corporate Tax Rate	30%	30%	30%	30%	30%	30%
ofit 2004-05 2005-06 2006-07 2007-08 ofit 117.5 113.2 102.6 111.8 Is charge 145.0 145.0 188.6 91.2 Its charge 16 1.6 1.6 1.6 Its allowable as a deduction from profits 0.0 0.0 0.0 0.0 ociation 0.0 0.0 0.0 0.0 0.0 ociation 0.0 0.0 0.0 0.0 0.0 ociation 145.0 145.0 11.2 9.2 ociation 141.0 145.0 143.6 153.9 not allowable 2.0 2.0 2.0 2.0 (25%, 6x pools and 100% first year) 2.1 2.0 2.0 2.0 (25%, 6x pools and 100% first year) 2.1 29.2 29.5 3.3 Allowance 2.0 2.0 2.0 2.0 2.0 sex exceptional expense -6.5 3.5 3.3 21.3 on </th <th>Trading profit/loss calculation (before losses brought forward)*</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Trading profit/loss calculation (before losses brought forward)*						
rofit the charge that the charge that the charge that the charge that charge the charge that charge the charge that charge that charge the charge that charge that charge the charge that charge tha		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
lis charge lines lis charge lines	Historic Cost Operating Profit	279.3	334.5	397.9	400.9	373.7	343.1
ls charge the property of the	plus HC Depreciation	117.5	113.2	102.6	111.8	129.0	147.3
ntis and a deduction from profits 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	plus infrastructure renewals charge	145.0	145.0	88.6	91.2	94.0	96.8
nrits 2.5 </td <td>plus amortisation of PFI</td> <td>1.6</td> <td>1.6</td> <td>1.6</td> <td>1.6</td> <td>1.6</td> <td>1.6</td>	plus amortisation of PFI	1.6	1.6	1.6	1.6	1.6	1.6
ediation roun profits 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ediation 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	minus amortisation of grants	2.5	2.5	2.5	2.5	2.5	0.1
ecitation 0.0 0.0 0.0 0.0 red as a deduction for tax purposes 172.0 0.0 0.0 0.0 red as a deduction for tax purposes 141.0 145.0 111.2 9.2 not allowable 2.00 2.00 2.00 2.00 2.00 norwision 31.90 0.00 0.00 0.00 s (25%, 6% pools and 100% first year) 15.5 19.3 21.3 23.3 axed as trading income 0.0 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 0.0 infors taxable on receipt -6.0 -38.3 117.6 121.4		0.0	0.0	0.0	0.0	0.0	0.0
red as a deduction for tax purposes 154.8 172.0 11.2 9.2 e 141.0 145.0 149.6 153.9 not allowable 2.00 2.00 2.00 2.00 not vision 31.90 0.00 0.00 0.00 s (25%, 6% pools and 100% first year) 214.1 292.4 290.5 297.3 axed as trading income 0.0 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 0.0 ions taxable on receipt -60 -8.8 17.6 121.4 ax -60 -8.8 17.6 121.4	minus finance lease depreciation	0.0	0.0	0.0	0.0	0.0	0.0
e not allowable 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.0	minus Depreciation Allowed as a deduction for tax purposes	154.8	172.0	11.2	9.2	12.5	16.0
not allowable 2.00 2.00 2.00 2.00 provision 31.90 0.00 0.00 0.00 s (25%, 6% pools and 100% first year) 21.41 292.4 290.5 297.3 axed as trading income 0.0 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 0.0 infors taxable on receipt 0.0 0.0 0.0 0.0 0.0 ax axable on receipt -6.0 -8.3 17.6 121.4	minus net interest payable	141.0	145.0	149.6	153.9	160.5	170.5
rowkiston 31.90 0.00 0.00 0.00 s [25%, 6% pools and 100% first year) 12.14.1 2.92.4 2.90.5 2.97.3 Allowance 15.5 19.3 21.3 23.3 2.0 axed ast trading income 0.0 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 0.0 infors taxable on receipt 0.0 0.0 0.0 0.0 0.0 sx -6.0 -8.3 17.6 121.4 121.4	plus revenue expenditure not allowable	2:00	2.00	2.00	2.00	2.00	2.00
S (25%, 6% pools and 100% first year) 214.1 292.4 290.5 297.3 Allowance 15.5 19.3 21.3 23.3 axed as trading income 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 inion staxable on receipt 0.0 0.0 0.0 0.0 0.0 ax -6.0 -8.3 17.6 12.1 23.3	plus Change in General provision	31.90	00.0	0.00	00:00	00.00	0.00
s Allowance 15.5 19.3 21.3 23.3 axed as trading income 0.0 0.0 0.0 0.0 ess exceptional expense -55.5 -3.5 0.0 0.0 infors taxable on receipt -0.0 0.0 0.0 0.0 ax -6.0 -38.3 177.6 121.4	minus Capital Allowances (25%, 6% pools and 100% first year)	214.1	292.4	290.5	297.3	9.608	326.7
axed as trading income 0.0	minus Industrial Buildings Allowance	15.5	19.3	21.3	23.3	25.7	28.3
ess exceptional expense -55.5 -3.5 0.0 0.0 tions taxable on receipt 0.0 0.0 0.0 0.0 0.0 ax -6.0 -38.3 117.6 121.4	minus Profit/income not taxed as trading income	0.0	0.0	0.0	0.0	0.0	0.0
tions taxable on receipt 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		-55.5	-3.5	0.0	0.0	0.0	0.0
-6.0 -38.3 117.6 121.4	plus Grants and Contributions taxable on receipt	0.0	0.0	0.0	0.0	0.0	0.0
	Trading profit/loss for tax	-6.0	-38.3	117.6	121.4	89.4	49.2

* The initial trading profit might differ if Revenue Variance Cell E10 is 0 or 1. However, for the former there is a further adjustment in line 48 which will match both calculations. This ha

2004-05

brought forward	used in the period	5
Losses brought for	Losses used in the period	Additions

Losses

Additions	0.9	38.3	0.0	0.0	0.0	0.0
Losses carried forward	149.0	187.4	8.69	0.0	0.0	0.0
Corporation tax calculation (if trading profit)						
	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Adjusted trading profit	0.0	0.0	0.0	51.6	89.4	49.2
Corporation Tax paid	0.0	0.0	0.0	15.5	26.8	14.8
Adjustments due to circularity (when Revenue Variance Cell E10 = 0)						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Adjustments in Tax due to circularity			0.0	0:0	0.0	0.0
Corporation tax paid	0.0	0.0	0.0	15.5	26.8	14.8

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Tax Calculations

Change in Accelerated Capital Allowances

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total capital allowances utilised	229.55	311.70	311.78	320.59	335.35	354.94
nlus Expanditura allowed as a trading profit deduction	00 0	000	000	000	000	000
plus Exponencial and a decreation	0,00	00:00	00:00	0.00	00.00	0.00
minus IRC	145.00	145.00	88.58	91.24	93.97	96.79
minus Historic Cost depreciation	117.47	113.17	102.64	111.82	129.02	147.25
minus amortisation of PFI	1.57	1.57	1.57	1.57	1.57	1.57
plus amortisation of grants	2.52	2.45	2.48	2.48	2.48	0.08
minus revenue expenditure not allowed for tax (excluding permanently disallowed expenditur	2.00	2.00	2.00	2.00	2.00	2.00
minus Grants and contributions taxable on receipt	0.00	00.00	00.0	00.0	0.00	0.00
plus depreciation allowed as a deduction	154.76	172.03	11.22	9.20	12.53	16.04
Change in accelerated capital allowances	120.78	224.44	130.68	125.63	123.79	123.42
Change in deferred tax items						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Change in accelerated capital allowances	120.8	224.4	130.7	125.6	123.8	123.4
minus change in general provision	31.9	0.0	0.0	0.0	0.0	0.0
minus movement in losses carried forward	0.9	38.3	-117.6	-69.8	0.0	0.0
Deferred tax items	82.9	186.1	248.3	195.4	123.8	123.4
Deferred tax change						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Deferred tax items multiplied by corporate tax rate	24.86	55.83	74.49	58.62	37.14	37.03
Deferred Tax + Corporation Tax						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Deferred Tax + Corporation Tax	24.86	55.83	74.49	74.11	63.95	51.78
Tax Reconciliation						
	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10
Profit before tax	89.1	198.6	248.3	247.0	213.2	172.6
Expected tax charge @ 30%	26.7	59.6	74.5	74.1	64.0	51.8
Tax charge/(credit) per accounts						
Corporation Tax	0.0	0.00	0.00	-15.49	-26.82	-14.75
Deferred Tax	-24.86	-55.83	-74.49	-58.62	-37.14	-37.03
Total Tax	-24.86	-55.83	-74.49	-74.11	-63.95	-51.78
O. combanes (final denotes)	1 01	0.74				
Overdiage (underdiage)	0:-	t	00.0	00.0	00.00	0.00
This over/(under) charge is explained as:						
Permanent differences @ 30%	-1.87	-3.74	00.0	00.0	0.00	0.00
Unexplained items	0.00	0.00	00'0	00:00	0.00	0.00
Total Difference	1.87	3.74	00'0	00:00	0.00	0.00
Check Line (Unexplained items = 0)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

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Water Industry Commissioner for Scotland

Alternative calculation of Historic Operating Profit excluding cash allowance for tax (This table is used when Revenue Variance Cell E10 = 0)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
WICS Revenue without tax allowance from the required revenue			0.0	0.0	0.0	0.0
minus Operating Costs			272.1	277.6	283.9	293.8
minus PFI charge			122.4	124.8	129.5	135.8
minus IRC			88.6	91.2	94.0	8.96
minus Historic Cost Depreciation			102.6	111.8	129.0	147.3
minus Historic Amortisation of PFI			1.6	1.6	1.6	1.6
plus Amortisation of grants			2.5	2.5	2.5	0.1
Historic Cost Operating Profit without tax allowance on Required Revenue			-584.8	-604.6	-635.5	-675.1

Adjustments due to Circularity between Revenue Requirement and Tax (This table only works when Revenue Variance Cell E10 = 0	works when	Revenue Vari	ance Cell E10 =	0)		
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Tax before iterations			00:00	0.00	00:00	0.00
Additional Tax and interest adjustment to infinity (due to circularities)			00.0	0.00	0.00	00.00
Difference			00.0	0.00	0.00	00.00
Proportion of tax			93%	%86	83%	93%
Proportion of interest			2%	%/	2%	2%
Corporate tax adjustment			00.0	0.00	0.00	00.00
Interest Adjustment			00.00	0.00	0.00	00.00

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Revenue Calculation

£ Million	2006-07	2007-08	2008-09	2009-10
Revenue Requirement	852.9	916.2	974.5	1,018.2
Cost of Capital	185.5	198.2	212.3	227.7
Infrastructure Renewals Charge	9.88	91.2	94.0	8.96
MEAV Depreciation (net of Amortisation of grants)	187.2	211.2	230.7	252.3
NBV eliminated by disposal of non-infra assets	1.0	1.0	1.0	1.0
Operating Costs	272.1	277.6	283.9	293.8
PFI Charge	122.4	124.8	129.5	135.8
Working Capital Adjustment	(2.8)	(2.4)	(2.7)	(2.9)
Cashflow from disposal of assets	(1.0)	(1.0)	(1.0)	(1.0)
Taxation payable in the year		15.5	26.8	14.8

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Output Sheet: Investment Summary

Planned Investment Programme (£ Million) (outturn prices)						
	2004-05	2005-06	2006-07	2007-08	2004-05 2005-06 2006-07 2007-08 2008-09	2009-10
Capital Expenditure components:						
Total Q&S III Programme:						
Infrastructure Renewals (Pre-efficiency)		0.0	88.6	91.2	94.0	8.96
Other Investment (Pre-efficiency)		0.0	192.1	468.0	538.8	592.1
Average IRE Efficiency target (%)		%0.0	%0.0	%0.0	%0.0	%0.0
Average OI Efficiency target (%)		%0.0	%0.0	%0.0	%0.0	%0.0
Infrastructure Renewals (Post-efficiency)		0.0	9.88	91.2	94.0	96.8
Other Investment (Post-efficiency)		0.0	192.1	468.0	538.8	592.1
Total Q&S III Programme		0.0	280.7	559.2	632.8	688.9
Total R/W & Other Capital Expenditure						
Capital Expenditure (Pre-efficiency)			10.0	2.9	9.0	9.0
Average Efficiency Target (%)		%0.0	%0.0	%0.0	%0.0	%0.0
Total R/W Capital Expenditure (Post-efficiency)			10.0	2.9	9.0	9.0
Total Q&S II and additional outputs (2004-05 and beyond)						
Infrastructure Renewals	141.8	6.96	9.9		1	
Other Investment	371.4	535.6	237.1	30.9		
Total Q&S II and additional outputs (2004-05 and beyond)	513.2	632.5	243.7	30.9		
Total Capital Grants and Contributions	2.0	2.5				
TOTAL CAPITAL EXPENDITURE	515.2	635.0	534.3	593.0	633.3	689.5

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Historic Cost Balance Sheet

£ Million	Audited Actuals 2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Fixed Assets:							
Tananible Assets	0		4 000	0	000		0 000 7
Tarigine Assets	2,081.2	2,832.0	3,208.4	3,330.6	3,939.0	4,348.8	4,793.2
Total Eight Accept	0.001.0	0.000	0000	0.1	0.00	1.040.0	4 700 0
TOTAL TYPE ASSETS	2,100,2	2,002.7	0,500.5	0,000,0	0,500,0	4,0,0	4,7 30.0
Current Assets:							
0.1-1-2		;	C		•		
Stocks	4.5	4.1	3.8	4.1	4.2	4.3	4.4
Trade Debtors	90.7	72.9	72.1	72.4	73.7	75.4	75.7
Prepayments and Accrued Income	51.0	25.7	51.0	53.1	54.0	55.3	55.5
PFI assets transferred to service contractors	38.8	37.2	35.7	34.1	32.5	30.9	29.4
Other Debtors	25.4	24.0	23.2	24.1	24.6		25.2
Total Debtors	205.9	186.8	182.0	183.7	184.8	-	185.8
Cash	10.6	6.7	2.0	2.0	0.2		2.0
Total Current Assets	220.9	198.4	187.8	188.7	0.191.0	193.1	192.2
Non-Government Loans (amounts falling due within one year)	12.7	10.7	6.2	9.9	8.0	2.9	1.4
Trade and Capital Creditors	102.8	131.9	162.6	136.8	151.8	162.1	176.5
Accruals, Payments received in advance, taxes and social security	114.0	115.0	104.5	110.5	_	115.8	120.3
Other Creditors	31.0	30.9	29.9	31.6	32.2	33.1	34.4
Creditors (falling due within one year)	260.6	288.5	303.1	285.4	304.7	313.9	332.6
Net Current Assets (Liabilities)	(39.7)	(90.1)	(115.3)	(92.6)	(113.7)	(120.8)	(140.4)
Total Assets Less Current Liabilities	2,541.6	2,742.6	3,093.2	3,455.0	3,825.9	4,228.1	4,652.9
Other Creditors (amounts falling due after more than one year)				1			
Non-Government Loans (amounts falling due after more than one year)	41.6	30.9	24.7	18.1	10.2	7.2	5.8
Deferred Tax	48.7	73.6	129.4	203.9	262.5	299.6	336.6
Provisions for liabilities and charges	66.2	81.2	63.2	55.0	50.2	45.3	40.3
Deferred income (grants)	17.6	17.1	17.1	14.7	12.2	9.7	9.6
NET ASSETS	2,367.5	2,539.8	2,858.8	3,163.3	3,490.9	3,866.2	4,260.6
Capital and Reserves							
Government Loans	2 138 5	2 246 G	2 422 R	2 553 G	2 708 2	2 934 3	3 207 9
Other Reserves	133.4	133.4	133.4	133.4	133.4		133.4
Post tax profit	9.09	64.2	142.7	173.8	172.9		120.8
Net retained earnings brought forward	34.9	92.6	159.8	302.5	476.3	649.2	798.5
TOTAL	2,367.5	2,539.8	2,858.8	3,163.3	3,490.9	3,866.2	4,260.6
Check	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Historic Cost Income and Expenditure

Revenue SSES SPC3 SPC3 SPC5 TOGES T	£ Millions	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1982 1973 9651 9651 9651 1982 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 10052 1 1 1 1 1 1 1 1 1								
119.0 117.5 113.2 102.6 111.8 129.0 129.	Revenue	958.3	927.3	965.1	982.7	1,005.5		1,018.2
143.0 145.	Historic Asset Depreciation	119.0	117.5	113.2	102	111.8		147.3
262.0 262.5 258.2 191.2 203.1 223.0 1.0 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.0 1.0 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.0 1.0 1.0 1.6 1.6 1.6 1.6 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 202.0 202.0 2.5 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 2.5 202.0 2.5 2.5 2.5 202.0 2.5 2.5 2.5 202.0 2.5 2.5 2.5 202.0 2.5 2.5 202.0 2.5 2.5 202.0 2.5 2.5 202.0 2.5 2.5 202.0 2.5 202.0 2.5 2.5 202.0 2.5	Infrastructure Renewals Charge	143.0	145.0	145.0		91.2		96.8
of PFI Assets 10 2.5 <t< td=""><td>Total Depreciation and Infrastructure Charges</td><td>262.0</td><td>262.5</td><td>258.2</td><td></td><td>203.1</td><td>223.0</td><td>244.0</td></t<>	Total Depreciation and Infrastructure Charges	262.0	262.5	258.2		203.1	223.0	244.0
of PFI Assets 16 1.6 <t< td=""><td>Amortisation of Grants</td><td>1.0</td><td>2.5</td><td>2.5</td><td></td><td>2.5</td><td></td><td>0.1</td></t<>	Amortisation of Grants	1.0	2.5	2.5		2.5		0.1
ossts 695.7 666.7 707.8 792.3 803.4 787.1 costs 309.3 275.4 256.2 272.1 277.6 283.9 costs 111.5 111.5 111.0 117.0 122.4 124.8 129.5 rofit 274.9 279.3 334.5 397.9 400.9 373.7 ges Expenses (Income) 52.8 55.8 35.9 400.9 373.7 ges Expenses (Income) 2.4 6.2 145.0 145.0 153.9 160.5 Repenses (Income) 2.2 36.5 35.5 37.9 400.9 373.7 fit 4.0<	Amortisation of PFI Assets	1.6	1.6	1.6	1.6	1.6		1.6
costs 309:3 275.4 256.2 272.1 277.6 283.9 rofit 111.5 111.0 117.0 122.4 124.8 129.5 129.5 rofit 274.9 274.9 279.3 334.5 397.9 400.9 373.7 ges Expenses (Income) 136.6 141.0 145.0 149.6 153.9 160.5 Expenses (Income) 52.8 55.5 3.5 - - - - sis 2.4 6.2 12.5 -	Revenue less Depreciation and Amortisation	695.7	665.7	707.8		803.4		772.7
rofit 275.4 256.2 272.1 277.6 283.9 rofit 111.5 111.0 117.0 122.4 124.8 129.5 rofit 274.9 274.9 279.3 334.5 397.9 400.9 373.7 rogenees (Income) 52.8 55.8 55.5 33.5 - - - Expenses (Income) 52.8 55.8 55.5 33.5 - - - Expenses (Income) 52.8 55.5 33.5 - - - - rist								
rofit 111.5 111.0 117.0 122.4 124.8 129.5 rofit 274.9 274.9 279.3 334.5 397.9 400.9 373.7 ges 136.6 141.0 145.0 149.6 153.9 160.5 160.5 Expenses (Income) 52.8 55.5 3.5 - - - - als 6.2 141.0 145.0 149.6 153.9 160.5 - int 2.4 6.2 12.5 - - - - - int 2.4 6.2 12.5 - <td>Operating Costs</td> <td>309.3</td> <td>275.4</td> <td>256.2</td> <td></td> <td>277.6</td> <td></td> <td>293.8</td>	Operating Costs	309.3	275.4	256.2		277.6		293.8
rofit 274.9 279.3 334.5 397.9 400.9 373.7 ges 1366 141.0 145.0 149.6 153.9 160.5 160.5 Expenses (Income) 52.8 55.5 3.5 - - - - sist 87.9 89.1 198.6 248.3 247.0 213.2 r 27.2 24.9 55.8 74.5 58.6 37.1 r 27.2 24.9 55.8 74.5 58.6 37.1 r 27.2 24.9 55.8 74.5 58.6 37.1 r 66.8 74.5 55.8 74.5 64.0 r 74.5 74.5 74.1 64.0 r 74.5 74.5 74.1 64.0 r 74.5 74.5 74.5 74.1 74.0 r 74.5 74.5 74.5 74.0 74.0 74.0 r 74.5 74	DELOHorso	7	7	1170		4070		42E p
total control of the								
Hander (Income) 52.8 55.5 3.5 7.4 1.0.6 1	Operating Profit	274.9	279.3	334.5	Ш	400.9		343.1
52.8 55.5 3.5 	interest Charges	136.6	141.0	145.0	149	153.9		170.5
87.9 89.1 12.5 - 12.5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Exceptional Expenses (Income)	52.8	55.5	3.5				
87.9 89.1 198.6 248.3 247.0 213.2 10.2 24.9 65.8 74.5 68.8 37.1 10.2 27.2 24.9 55.8 74.5 58.6 37.1 10.2 27.2 24.9 55.8 74.5 58.6 37.1 10.2 27.2 24.9 55.8 74.5 64.0 10.2 172.9 172.9 149.2	Asset disposals	2.4	6.2	12.5				
87.9 89.1 198.6 248.3 247.0 213.2 15.5 27.2 24.9 55.8 74.5 58.6 37.1 10.5 27.2 24.9 55.8 74.5 58.6 37.1 10.5 27.2 24.9 55.8 74.5 58.6 37.1 10.5 27.2 24.9 55.8 74.5 64.0 10.5 17.2 17.3 172.9 149.2								
27.2 24.9 55.8 74.5 58.6 37.1 27.2 24.9 55.8 74.5 58.6 37.1 ent 27.2 24.9 55.8 74.5 58.6 37.1 ent - - - - - - ent - - - - - -	Pre-Tax Profit	87.9	89.1	198.6		247.0		172.6
27.2 24.9 55.8 74.5 58.6 37.1 ant 27.2 24.9 55.8 74.5 74.1 64.0 ent - - - - - - 60.6 64.2 142.7 173.8 172.9 149.2	Current Tax					15.5	L	14.8
ent 27.2 24.9 55.8 74.5 74.1 64.0 e4.0 e	Deferred Tax	27.2	24.9	55.8		58.6		37.0
ent	Total Tax	27.2	24.9	55.8	74.	74.1	64.0	51.8
60.6 64.2 142.7 173.8 172.9 149.2	Dividend Payment			•	•			
60.6 64.2 142.7 173.8 172.9 149.2								
	Post tax profit	60.6	64.2	142.7		172.9		120.8

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Cash Flow

£ Million	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Operating Cash Flows						
Operating Profit	279.3	334.5	397.9	400.9	373.7	343.1
, DOC.						
NO.						
Total Depreciation and Infrastructure Charges	262.5	258.2	191.2	203.1	223.0	244.0
Amortisation of PFI Assets	1.6	1.6	1.6	1.6	1.6	1.6
Amortisation of Grants	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(0.1)
Change in Stock	0.4	0.2	(0.2)	(0.1)	(0.1)	(0.1)
Change in Debtors (excluding PFI assets transferred)	17.5	3.2	(3.3)	(2.7)	(3.5)	(0.6)
Change in Creditors	29.9	19.1	(18.1)	17.9	14.3	20.2
Change in Provisions (excluding deferred tax)	15.0	(18.0)	(8.2)	(4.8)	(4.9)	(2.0)
Exceptional Items	(55.5)	(3.5)				1
Net Cash Flow From Operations	548.2	592.9	558.3	613.4	601.5	603.1
Investment Funds Flow						
Information of an expension of the contract of	0 7	0	C	3	0.70	0
Infrastructure netrewals Experienture	0.141.0	90.9	7.08	3.1.E	94.0	90.0
Other Net Asset Additions	373.5	538.1	439.1	501.8	539.4	592.7
Grants	(2.0)	(2.5)				
Asset Disposals	7.5	13.5	1.0	1.0	1.0	1.0
Changes in Investments	-			-		1
Net Investment Cash Flow	505.7	619.0	533.3	592.0	632.3	688.5
		3	i c	3	i d	100
INEL CASH FIOM PROM Operations less investment	42.0	(20.1)	0.62	4.12	(30.8)	(83.4)
Financing Cash Flow						
Government Loans Repaid	152.7	60.2	53.4	61.4	73.1	63.5
Non-Government Loans Repaid	12.7	10.7	6.2	9.9	8.0	2.9
Interest Paid	141.0	145.0	149.6	153.9	160.5	170.5
Taxation Paid				15.5	26.8	14.8
Dividends Paid	•		•	•	•	•
New Debt Assumed (net from cash stock)	260.8		184.1	216.0	299.3	337.0
of which not refinancing	95.4	165.5	124.6	148.0	218.2	270.6

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Current Cost Balance Sheet

E Million	2005-06	2006-07	2007-08	2008-09	2009-10
Fixed Assets:					
Tangible Assets	24,390.6	25,379.8	26,430.8	27,531.3	28,696.5
Third Party Contributions					
Investments	0.1	0.1	0.1	0.1	0.1
Working Capital	(140.1)	(117.7)	(132.6)	(142.9)	(161.2)
Net Operating Assets	24,250.5	25,262.2	26,298.3	27,388.4	28,535.4
Cash and Investments	2.0	2.0	2.0	2.0	2.0
PFI assets transferred to service contractors	35.7	35.1	34.5	33.8	33.1
Non-Trade Debtors	23.2	24.1	24.6	25.1	25.2
Non-trade Creditors due within one year	36.1	38.1	40.2	36.0	35.8
Creditors due after more than one year	24.7	18.1	10.2	7.2	5.8
Provisions for liabilities and charges	63.2	55.0	50.2	45.3	40.3
Deferred Tax	129.4	203.9	262.5	299.6	336.6
Net Assets employed	24,058.0	25,008.3	25,996.3	27,061.2	28,177.1
Capital and Reserves					
Government Loans	2,422.8	2,553.6	2,708.2	2,934.3	3,207.9
Other Reserves	133.4	133.4	133.4	133.4	133.4
Current Cost Reserve	21,199.3	21,926.1	22,681.8	23,467.8	24,286.0
Post tax profit	142.7	92.7	7.77	52.8	24.1
Net retained earnings brought forward	159.8	302.5	395.2	472.9	525.7
TOTAL	24,058.0	25,008.3	25,996.3	27,061.2	28,177.1
Check	TRUE	TRUE	TRUE	TRUE	TRUE

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Current Cost Income and Expenditure

£ Millions	2006-07	2007-08	2008-09	2009-10
	1000	1 0 0	0	1
Kevenue	982.7	1,005.5	1,009.2	1,018.2
	100		1	0
Current Cost Depreciation	187.2	211.2	730.7	252.3
Infrastructure Renewals Charge	9.88	91.2	94.0	8.96
Total Depreciation and Infrastructure Charges	275.7	302.4	324.7	349.1
Amortisation of Grants				
Amortisation of PFI Assets	1.6	1.7	1.7	1.8
Revenue less Depreciation and Amortisation	705.3	701.5	682.8	667.4
CC Operating Costs (excluding Dep and Amortisation)	272.1	277.6	283.9	293.8
PFI Charge	122.4	124.8	129.5	135.8
Working Capital Adjustments	2.8	2.4	2.7	2.9
Current Cost Operating Profit	313.6	301.4	272.1	240.6
nterest Charges	149.6	153.9	160.5	170.5
Exceptional Expenses (Income)				
Asset disposals	(0.0)	(0.1)	(0.1)	(0.1)
Financing Adjustments	3.1	4.4	5.3	5.9
Current Cost Profit Before Taxation	167.2	151.8	116.8	75.9
Current Tax	,	15.5	26.8	14.8
Deferred Tax	74.5	58.6	37.1	37.0
Total Tax	74.5	74.1	64.0	51.8
Dividend Payment		-	1	-
Post tax profit	92.7	7.77	52.8	24.1

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Main Outputs: Model Output

	2005-06	2006-07	2007-08	2008-09	2009-10
Revenue from Customers (Model Calculation) (£m)	965.1	852.9	916.2	974.5	1,018.2
Change in Customer Revenue (Model Calculation) from Previous Year	n/a	-11.62%	7.42%	%98.9	4.49%
Revenue from Customers (After Smoothing) (£m)	965.1	982.7	1,005.5	1,009.2	1,018.2
Change in Customer Revenue (After Smoothing) from Previous Year	n/a	1.82%	2.33%	%98:0	%06:0
Total size of investment programme (inc IRE and grants) (£m)	635.0	534.3	593.0	633.3	689.5
Operating Costs (not including depreciation or PFI) (£m)	256.2	272.1	277.6	283.9	293.8
PFI Costs (£m)	117.0	122.4	124.8	129.5	135.8
Regulatory Capital Value (£m)	3,519.8	3,847.8	4,214.3	4,606.1	5,037.5
Net Debt Outstanding (Government and Non-Government Loans net from cash) (£m)	2,451.7	2,576.3	2,724.3	2,942.5	3,213.1
Gearing Ratio	%02	%29	%59	64%	64%
New Debt Assumed (incl. Grant-in-aid) (£m)	165.5	124.6	148.0	218.2	270.6
Public Expenditure Limit (£m) incl. carry-over	421.5	438.0	495.4	529.4	493.2
Scenario Compliance	Yes	Yes	Yes	Yes	Yes
Targeted Public Expenditure (£m)	165.5	124.6	148.0	218.2	270.6
Compliant with Targeted Debt	Yes	Yes	Yes	Yes	Yes
Interest Costs (£m)	145.0	149.6	153.9	160.5	170.5
Weighted Average Cost of Debt	2.9%	2.8%	2.6%	2.5%	5.3%
Return on Capital Employed	4.6%	2.0%	4.5%	3.5%	2.6%

	2002-06	2006-07	2007-08	2008-09	2009-10
Alternative Revenue Phasing (£m)	965.1	982.7	1,005.5	1,009.2	1,018.2
Year on Year Revenue Change		1.8%	2.3%	0.4%	%6.0
Variance From Model Calculation (£m)		(129.7)	(89.3)	(34.7)	
Model Revenue Alternative Phasing	-				

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30... 300% 300% 78%

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Model Outputs: Key Performance Indicators (PR04 and PR99)

Key Performance Indicators (ratios from PR04)

List of Ratios Name	Definition	Ofwat 2005-10 target	rget
Cash interest cover	funds from operations: gross	Around	က
Adjusted cash interest cover	funds from operations less capital	Around	1.6
Funds from operations:debt	Funds from operations:debt	Greater than	13%
Retained cashflow:debt	Retained cashflow:debt	Greater than	7%
Gearing	net debt:regulatory capital value	Less than	%59

KPIs	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Cash interest cover	3.89	4.09	3.73	3.88	3.58	3.4
Compliant with Ofwat acceptable range			yes	no	yes	yes
Adjusted cash interest cover	2.03	2.31	2.45	2.57	2.19	
Compliant with Ofwat acceptable range			no	no	no	no
Funds from operations:debt	17.86%	18.27%	15.87%	16.30%	14.08%	13.00
Compliant with Ofwat acceptable range			yes	yes	yes	yes
Retained cashflow:debt	17.86%	18.27%	15.87%	16.30%	14.08%	13.00
Compliant with Ofwat acceptable range			yes	yes	yes	yes
Gearing		%99.69	%96.99	64.65%	63.88%	82.78
Compliant with Ofwat acceptable range		_	no	yes	yes	yes

Key Performance Indicators (selected ratios from PR99)

List of Ratios			
Name	Definition	Ofwat 2000-05 target	yet
Debt Payback Period (EBITDA basis)	Debt / Net operating cash flow from operating activities	Maximum (Years)	5
Debt Payback Period (EBDA basis)	Debt / Net operating cash flow from operating activities less tax less interest expense	Maximum (Years)	7
Cash Flow to Capital Expenditure Ratio (EBDA basis)	Net operating cash flow from operating activities less tax less interest expense / Capital	Minimum (Percentage)	40%

KPIs	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Debt Payback Period (EBITDA basis)	4.16	4.13	4.61	4.44	4.89	5.33
Compliant with Ofwat acceptable range			yes	yes	yes	no
Debt Payback Period (EBDA basis)	2.60	5.47	08.30	6.14	7.10	69'.
Compliant with Ofwat acceptable range			yes	yes	no	no
Cash Flow to Capital Expenditure Ratio (EBDA basis)	81%	72%	77%	75%	%59	61%
Compliant with Ofwat acceptable range			yes	yes	yes	yes

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Alternative inputs: Revenue Variance Options

	2005-06	2006-07	2006-07 2007-08 2008-09 2009-10	2008-09	2009-10
Iternative Revenue Phasing (£m)	965.1	982.7	1,005.5	1,009.2	1,018.2
Variance From Model Calculation (£m)		129.7	89.3	34.7	
Level of debt (£m)	2,422.8	2,553.6	2,708.2	2,934.3	3,207.9
Gearing ratio: Debt to RCV	%02	%29	92%	64%	
lodel Revenue Alternative Phasing	-				

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: General Assumptions

	2002-03	2003-04	2004.65	2000-00	2009-3T	2017.08	900000	2009-13	2009-13 2010-11	2011-12	3913-13	2013-14	2019115	2012/16
5		CSON	1,48%	2.80%	5002	5002	2,00%	2.80%	5002	50002	2,00%	2,80%	2,000	2006
CP1160kr (Blate visit 2009-05)	98.40	96,65	58.54	180,00	100,000	104.84	108.12	188.24	110.41	112.82	114.87	111/11/	119.50	121.90
1939		5.4975	50800	3.80%	3/00%	3008	3.00%	3.90%	3/00%	30000	3,00%	3.90%	3/0005	30895
COPI Index (Rase year 2005-08)	80,38	80.16	60.09	180,00	100000	106.89	109.27	110,66	115.90	119.41	122,99	126.68	130,48	104.39
Maked MCDV (Bro)				3,794										
Public Expenditure Limit (Brt) *			67853		160.0	180.0	182.0	0.000	160.0	183.0	182.0	0.000	160.0	180.0
Public Expenditure Target (Cm)			180.0	5.995	100.6	149.0	2002	8008	138.3	100.5	14074	0.000	212.8	211.0
Acceptable sanistics from Public Expanditure target				BOR	306	1985	2000	30%	306	2000	2000	30%	30%	2000
Nominal Interest Rate Applicable to new debt			4,00%	4.80%	44804	4,00%	4.00%	4.80%	44004	4,00%	4.00%	4.80%	4.60%	4,00%
Nominal Return on Castomer Retained Earnings					3.35%	2286	3355	1225	3.32%	2006	3355	335%	3.55%	2285
Optimal Georing Patio					500	5695	569	100	500	5005	500	100	500	200
(*) DEL la 2004-16 includes carry-over from any dous eases														

2003-03 2003-04 2004-05 2005-06 2006-07

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Water Industry Commissioner for Scotland Financial Model - Strategio Review of Charges 2006-10 Input Sheet: Asset Data Entry

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		970	108.5	441.1	483.1	208.0	250.5	277.5	414.5	403.4		
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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Asset Data Entry

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Short		88	01	1.0	18		100	10	1.0		200	+	=
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Total September 1		970	. 01	. 10	. 0	91	100	. 19	91	01	. 10	4.0	
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Annual Depociation tengans by disposal of sasets (current cost) (CMIRan) (2005-60 g. 2009-04 S209-45 J 2005-06	1000-04	5904-00	500 - 50 GE	2006-47	2007-08	2080-08	2009-10	2818-11	2011-12	2010-13	2013-14	2814-15	20m2-18
Niny Shart					٠	1	1			1			
Market						1	1						
Mattern leng			-	-	-	-		-	-		-		
Long													ľ
		1											
Ammail Depreciation tengans by disposal of sessits (historic coat) (CMIllion)	101000	9748	908-00	1908-67	3007-00	909990	0000010	2016-11	2041-12	804018	2013-14	3814-15	8015-16
Very Short					٠	1	•		٠	1			
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Note					•	•	•		٠	1	•	•	٠
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Operating INDIAN 2008-07 (CHIRDRA) (Buthors prices)			8	Chack									
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Western		1,081,	9800	THUE									
Medium long		204.6	188.0	HA									
CRIZ Infect ducti		2000	1,0840										
Photoprotes Aports		27,082,5	0.080.0	Ĕ									
Dota		034650	24,390.0	1976									
Annual Depociation Work in Progress commissioned after April 1st 2005-07 C Million	50605.04	59-1080	2008-00	7908-47	2807.48	8099708	2009-10	2916-11	2011/12	8018118	2913-14	2814-15	80518
(Constitution 2009 of Littory				I									
					_								
Chains Shands and Place Assets 2023-04	8	1100,0010	01/81/8004	-									
New State	١		44.4										
Store		375	27.0	TRUE									
Metan		2222	383.5	THUE									
Wednin long		100	28	NEW YEAR									
tring.		30.0	20.0	HAR									
Inhost solars Assets		1,1803	468.7										
Total		2,011.6	2000										
Majorie Cest Demotratur - (Base Assets 30.03/94)	2002-01	2004-00	2008-09	2808-67	2807.68	2088.09	300910	2010-01	2011/12	2012-13	2013-14	2814-15	2019-18
Viny Short		23.5	18.9	17.0									
Short And on		9	000	9									
Vestion long		ŧ	12	2			l		L	l		l	9 6
Dong.		200	100	8 6	30 5	100	5, 2	* 10 to	213	0 P	5 4	54	
			200	Ш		Ш	Ш			l			
Historic Cost Ameritanion of Calairing Cravits (31 60 00)	90000	99.60	308-08	1908-67	2807-09	909970	014000	2916-11	8041-12	8012-13	2913-04	2814-15	8045-46

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Water Operating Costs (2005-06 prices)	10:5082	2000	2005.08	2096-07	2007.08	2008-09	3389.10	3095-06 3095-07 3907-08 309-09 3005-10 3010-13 3013-13 3013-13 3013-13 3013-13	2011/12	2012-13	201218	2014.15	2015-16
Base Operating Cods for the report service (En-	172.5	ı	ı										
New lotting bothwith manuagement control organisting Base Operating Cost for Mater			;		0.0				-			0.00	
State constitution and a				100	200	100				20			1001
DW Compliance Com		ŀ	١	9.0	0.3	80	3	L	6.6	2	27	979	979
Abstraction Control Costs (Cm)			٠										
Growth (Strip				0.1	0.9	90			90	0.5	0.5	9.0	50
Security of Supply (Cm.)		٠											
Improvement in the level of Quaterner Service (Cm)		٠											
CTICARIO, TAIGHT DI SAN Operating LOSIS (LAmulative) Officiency Tologos on New Operating Codes (Camulative)		0.00%	4000	II.IPS	63/15	21.155	State	SEEN	25.685	3.60	BEER	2585	3.6%
Wastewater Operating Costs (2005-06 prices)	2803:04	2004-02	2001-06	2009-07	20005-08	2008-09	2089-10	2010-11	2011-12	2013-13	2010-14	2014-15	3015-16
State Operating Costs for the sovestage service (En)	504.3												
New factors (outwith management control) impacting Base Operating Cost for													
Sewerage Service (Cir.)		٠	9.5	2.9	2.0	0.0	2.9	2.9	88	2.9	2.9	2.0	9.0
New operating contic													
Christmental Completion (Dr.)		٠		3	00	4	1	3	2	1	7	2	2
Charles (Circ)		•			8	Ĭ	1	Ī	Î	Ì			
The property of the species of Company Contract Care				ľ	2	I	I					I	
Chicaman I segal on best Consider Cotto (Commission)		0.400	18.80%	2000	Series and a serie	7	10.01%	NO STATE		18.01%	10013	2000	1000
Chicagony 105209 principal Optiming Coops (Certificative)		2000	4400]]	1	l	l	200
Mi Estimon Taront Comulation		100		0.000	0.000	0.00%	0.000	1990	2000	4.000	0.000	0.000	8,80%
							l	l		l	l		
Mean Workship (1909-06 prices)	200000	2084-09	2005-06	2006-07	2007-08	3308-69	2009-10	2010-11	2011-12	2012-13	2013-14	2814-15	2015-16
Speraling Cedit (Dro		٠	٠	40	52	92	2	100				٠	٠
Billionery Grand Ch. Print Application	_	0.00%	0.00%	54000	54800	9,000	0,006	54000	9,0016	4,00%	90000	54000	0.00%
Adjustments to Cost of Diginal (Drt)													
Contract to the second	2000000	200	20000	0000000	000000	00.000	0000000	OBSECTS	5844.43	00107-00	00000.04	201710	2011
				-									
Company Coperate program posture		200	1					1					
Considerable of Consideration and Consideration Considerat													
Card		13	96	20	0.00	900	20	20	200		20	0.00	900
PRis papers transferred to service contrastors despuis Casts		38.8	20.3		34.1					28.3			
Amortisation of PFI (Historia Casts)		1.8	3.8	2.6	1.8								
Coeffices (Amaunts falling due after more than one year)	_												
Provisions for liabilities and charges		9	60.2	55.0	803	653	40.3	35.4	30.9	26.7	22.8	18.8	14.8
Salance Deed Assemblies	200000	200	20000	200200	0.0000	9368.00	0.000	MICH	201100	80000	MANAGE	31448	81518
		ŀ	ŀ				ľ	ľ	l		ŀ		
Sector IC of Council 891				1000	1			l	ľ				
President of April 2011		100	1	l	ľ	l	ľ	l	ľ		l	K NOC	100
Other Debies A. Recental			2000	2000	2505	200.2	2000	2000	2 805	2007	200	2000	2 87%
Treche & Capital Creditors Ch. of Caperd		20,000	П	l		l	l	l	l		l	l	l
Acersalis, Plannents spooned, saxes and secial security IN-Open in PFD.	_	29,78%	28,00%	28,00%	285,00%	28.00%	28,00%	590000	28.00%	28.00%	28,00%	580,00%	28.00%
Other Caddoo CS Open w PFD		8000	П	П		П	П	П	П	П	П	П	П
Towns (C. M. Low)	2000000	00.000	100000										
Comment of manager		100											
lavara.		2007.00	300.1										

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Historic cost Balance Sheet:

THE SECTION ASSESSMENT	2800-04
Targible Assets	2,5801.2
hwatrets	6.1
Stocks	4.5
Tracks Districts	587
Prepayments and Accuad Income	57.8
PRI assets transferred to service contractors	200
Offer Debton	58.4
Total Debon	8.808
- Cash	10.6
Non-Conserment Leans dampunis failing due within one year	12.7
Track and Capital Conditors	100.8
Accreats, Psymprits received, Scots and secial security	114.0
	20.0
Cheffus Faling due within one year)	9707
Other Ceetitoes Jamoures Salling due other mare than one year!	
ð	41.8
Delened Tax	48.7
Previsions for liabilities and charges	66.2
Defende fracerse	12.6
Government Losses	2,158.5
Other Plaserves	120.4
Post tax profit	9.00
Not recoved servings	989
Check	-

Historic cost income and Expenditure

C Millians	2003-04
Parties and the same of the sa	0.000
Mobile Askel Deprication	118.0
Mindrofus Resembli Clargo	143.8
ŝ	302.0
Amortisation of Grants	1.0
Amonisation of PFI Assess	3.6
Her enue liess Departd about and Americanion	696.7
Oppositing Costs	308.3
All Charge	111.5
Operating Profit	276.9
Priorate Charges	126.6
Cooplians Coperate (Income)	22
Asset disposals	2.4
Pre-Tax Pode	67.9
Current Tax	
Defended Tax	200
Tess Tax	27.22
Christmat Payment	
Post to prefit	6009
Check	THE PERSON

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Non-asset Data Entry

Government Loans:

Generalization rate band (Costing Nation) Chillian	2303-04										
20000	68.9										
48-4.09K	800.2										
2000,00000	5000.5										
80%-05.00%	138.4										
254,7,985	454.0										
BM-63995	800										
7,490,7	166.9										
1996-11-8946	100.0										
H16-11-806	585										
155-11556	4.2										
FM-119M	0.0										
HR-H256	0.0										
Total Generalism Loans	2,138.5										
Generalisest Laura Dae for Repayment (C Millor)	2903-04 2084-85	2084-85	2003-06	20000-07	2000-08	2009-09	2009-10	2010-11	2011-12	2012-13	2010-114
363.095		929		L	1000					ı	•
45,4,005		900	8	10.0	002	8	15.0	27.4	0'01	18.0	18.0
200,0000					90						127
200-0108%		8.0				2.0					8
250.25850		18.0	10.0	26.0					8.0	20.0	30
B14-638914	_										
MAC-0.000		10.3	10.1	9.1	10.8			0.3	876		187
996-41896		99	83	40	8.6		15.8	32.7	000	2.3	13
HIS-HISSE		0.0	18.7	0.0	8.0	2.5		1.0	0.1		90
155-1255		0.1	88						٠		٠
FE-11896	_	٠		4.0	٠						•
145-14.00%								00	٠		•
Total Covernment Loans		150.7	2.00	50.4	410	200	60.5	96.5	585	100	3

Non - Government Loans:

Non Government Loans rate band (Chosing Value) it billion	2000501			
2000	3.4			
77.00				
75-5 (875)	60			
55-8 885				
75,7385	9.6			
200.00.00	0.0			
M-0.00M				
(21)-12 MON.	100			
12-11-875	50			
25-11806	1.0			
25-11205				
55-14.805				
olal Embedded Debt	54.3			
ton-Generalment Loans Day for Repayment (X Million)	2005-04	2064-02	2005-06	
83388		٠	2	
X4.00X		٠	,	
24-5 (89%)			0.0	
2000		-	-	
Pru-Pages.		100	4.0	
10,45 SBM		٠	٠	
Mu-is sens.		٠	,	
925-11-806		11.1	5.4	
115-11596		٠	,	
38738				

208-10 2010-11 2011-12 2012-13 2013-14 2010-16 2015-16

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Quality and Standards II Input

61-9000 - 0		-							
2008-0	8			-	n	- Pa		-	-
2007/05	0	3	4		10.2		٠	9	300
2019-02	ı			288.4				505.3	
2005-00	L					18.9			
2011083	19.0					12.6			208.6
2005-64	37.9			16.6		4.0	89.2		443.4
2000000	42.2	11.2	68.1	14.4	130.4	37	٠	145.7	403.1
QBS II Investment (CMIII ent) (ALL IN 2005-05 prices)	(64,644)	Short	MANUFACTURE AND ADDRESS OF THE PARTY AND ADDRE	Over the Ove	0.07	Indian (and)	Infrostructure Resemble Print of grants;	Infraelucture Enfrancement	Total

The state of the s	200.00					and an area of the same of the	-	
Actual Spend (Incl. Spend to Save capes and additional terral)	403.1	440.4	97507	9309	248.7	500.9		٠
WICHS Outputs Delivered (Incl Spend to Save capan and additional female	403.1	443.4	223.4	635.9	262.7	20.9		
Assets parabased through Grant-In-old (for leeffalency) (2006-06 prices)*	2000-03	3909-03 3069-94	2804-05	3005-06	2008-67	2087-00	2000-08	2008-18
Very Stori	L		l			l		
2004								
Medium								
Shot my bird								
1,010								
Intritio (and)								
INTOSTACTURE Embodement								
Total								
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WOTE: The information input is this table is a subset of the information in table "Chambs and Third Party Combinations" beauted in the Asset Data Entry

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Input Sheet: Tax Data Entry

oalian New of capital expenditure for tax purposes	2803-04	3084-85	2005-06	20000-07	0000000	2008-00	2089-10	2840-11	2011-12	2012-13	2013-14	2814-15	2015-16
		590,462	268,500	429,443	477,367	695,190		408.867	673,174	683,683		642,748	679,777
day ougstained expenditure including IPB countury prices; exalkating grants*		813.304	630,580	634.330	860.008	100,000		809.400	100.000	619.582		718.790	738.30n
reversage Transferred (Qoeing WP - Caper)		34.48%	20,00%	50,00%	90,00%	50.00m	80,00%	90,08%	100.00%	60.00%	90009	90,00%	56.00%
		404.890	881.003	477.387	535.197	584.360		\$73,174	080.000	089.073		678.772	TEACOM
mote qualifying for 108% first year allowances		9,000	9,000	20000	0.00%	4.80%		9,000	arbd a	4.80%		5000	1000
sasts to be included in the parenti (25%) peol		20472	43.30%	40,08%	40.2P%	43.30%		40,08%	40 DBT	43.30%		10.08%	+3.20m
mets qualifying for long life (OTA) pool		20,480	28.54%	20000	2000	20.54%		20000	658	28.54%		20000	28,540
mets qualifying for Industrial Buildings Allowances		9.655	9.67%	9.00%	9875	200		9.67%	5.675	9.80%		5.00	199
sects purchased under finance lessing		0.00%	0.00%	5400	0.00%	0.00%	90000	9000	0.00%	0.00%	9000	5000	1,00%
aliand revenue expenditive deducted in year of apend		0.00%	0.00%	5400	0.00%	0.00%	0,000	54000	0.00%	0.00%	90000	5000	1000
collabsed revenue expenditive depreciated in non-infrastructure	_	6.68%	0.91%	2000	0.90%	20.00		50,000	20,000	0.91%		2000	0.91%
aphabaed revenue encendius depreciated - inhestructus		0.00%	0.00%	14,48%	14,40%	14.40%	34,40%	14,42%	14.40%	14.40%	34,40%	14,40%	14.40%
philabond revenue expenditure net depreciated	_	0.00%	0.00%	94000	0.0030	0.00%		9000	0.00%	0.00%		9000	8.00%
her appear and qualifying fer oggistal allowances or revenue deductions		21,32%	18.40%	200%	2.00%	2.80%		2,00%	2.00%	2.00%		2.00%	2.00%
ands and card-fluidies taxable on receipt		0.00%	90000	56000	0.00%	G-80%	0.00%	9400	14.00°8	4.80%		0.00%	8.00m
		100,00%	100,00%	180,08%	300,00%	100.00%	100,000	100,00%	SCOT DOLL	100.00%	180,000,	100,00%	106.00%
		THUE	19636	1190.00	THUS	3764	1908	TPREE	THUS	THUE	11938	TRUE	THUS
Shark (Companion with Involutional summary abands		HER	2000	188	TRIE	TRUE	2002	Mark I	Tales.	US DE	20.00	Term	TRIE

" not taxable on receipt.

Ton Robe		2000	3000	2000	2000			2005					308
Plant and Hackingry Shot life - less than 25 years - allowance rate inducing balance)		555		5000	2500	NOT	200		150	200	500	565	100
Plant and Machinery Long Pile - more than 25 years - allowance rate (heldicing balance)		ć		6	٤								S
industrial Buildings Allowance rate (straight this)		¢	П	¢	¢								ç
Dedastions tax copital coperations	2803-04	3064-85	30909-08	2000-07	3300-08	9009-68	3089-10	2010-11	2011-12	2012-12	2003-14	2014-15	3015-16
Existing BM delma (Outburt)	L	13.9	13.5	14.0	13.9	14.0	14.0	140	14.0	12.5	13.9	13.9	180
Preside tease degradation						-		-					
Depreciation on capitalised revenue expenditivo - non - infrastructure contuins - Assets ca		96		-		-	-	-	-	-	-	-	-
Depresional on appliation revenue expenditure - infrastructure contains		146.0	145.0	23	4.0	23	10.7	13.6	16.2	18.0	22.1	25.4	999
Capitalised revenue expenditure deducted in year of spend									٠				٠
Amortisation of PFI assets		1.8		970	1.8	1.6	1.4			1.8	1.6		1.8
Austrage searchite - non - infrastructure		qt.	1.0	0.1	40		2.0	1.0	40	1.0	8.0	4.0	11
Austrage assert the - infrastructure		9000	Γ	30.0	3000	-	20.0	900	0000		30.0	3000	700
Secales accepts	Service Ann	2007700											
Opening pool of stablel alterances - asset the < 25 years	L	2692											
Opening pool of capital allevances - askel life >= 25 years		583.1											
Payolitical I BAYs		2017.4											
Opened provising - spering belonde		7,585											
Losses britugit forward		140.0											
Other Deductions Majoriments	2003-04	2004-02	2005:00	2006-07	2907.08	2009-00	014602	110182	2011/12	2012-13	2012/14	2014/15	2015-16
Pervenue expenditure not albeitable for tax purposes.	L	2.0	8.8	2.0	20	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Permanently disallowed expenditure					٠				٠				٠
Profitimonne net aubiect to ben'not based as trading income					٠							٠	٠
hosean/decrease in general positions (puting)		919	Ī	Ī	I								
Adi animarchi to tray chance.							,						٠

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

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Specialing groups book with the variet of millions of the control	2001.02 2001.0	77.3 (14) 57.1 (14) 57.1 (14) 57.1 (14) 57.1 (14) 145.7 (16) 57.2		90.08 2008-09 3001 3001 3001 3001 3001 3001 3001 30	2009-10 24 0714 4 24 0714 4 25 070 7 26 0714 6 26 0714 4 26 0714 4 26 0716 4 26 0716 4	2810-11 80.11 80.11 80.11 285.13 125.13 125.13 126.13 126.13	4017 4007 4007 416.2 416.2 2416.0 130.0 130.0 7,000.0	2019-13 403.0 403.1 403.1 2,000.0 3,000.0 2,000.0 3,000.0 3,000.0 3,000.0 3,000.0	2000 2000 1,148.0 2000 2,000 1,000 2	284.1 585.1 1200.7 200.0 177.1 177.1 9,164.7	2016-19 00.44 00.05 1215.0 1217.0 1217.0 124.4 126.05 10.4764
oral Additions to Asset Brass (C. Millions) shoot shoo									8		24-25 25 24-25 24-25 24-25 24-25 24-25 24-25 24-25 24-25 24-25 24-25 24-
Additions to Asset Base Gald III and beyond (C Millon) - outburn prices for their Major Ma	2002-00- 2004-00- 200	29097-06	55555555555555555555555555555555555555	*5.9993999	2009-10 2009-10 2009-10 2009-10 2004	2010-11 2013 2013 2013 1121 1121 1121 2013	2011-12 2012 2014 2014 1014 1017 1010 1010 1010 2010	2010-0 100-1	2000 2000 2000 2000 2000 2000 2000 200	24-15 24-15	2015-14 10-1
Matthews to Asset Blase Calif I to Millioni - common prices for a Social Scotal	2001-01 200 200 200 200 200 200 200 200 200 2	200 200 200 200 200 200 200 200 200 200	200 200 40 200 40 200 40 20 20 40 20 20 40 20 20 40 20 20 40 20 20 20 20 20 20 20 20 20 20 20 20 20	1999999 83	9	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2011-12	00 Per 10	P1 (5:02)	41-410	8011F38
Additions to Asset Bine Natall/Medicates & Others - outburn prices on y Short Short Medical Medical Medical Medical Medical Medical Registration (Medical Registration) Very Medical	208204	2006.08	100	9 9	90	100 mm		0.000		5	
Assets added Tirocuph grants in the report year - enthum prices State State Amount tog Amount tog Chicke the of Informative Enthurement Fight	2003-04 2004-65 200	2006-06	0.000	99000	01-0000	144	#1-1108 - · · · · · · · · · · · · · · · · · · ·	9019-0	# · · · · · · · · · · · · · · · · · · ·	2 · · · · · · · · · · · · · · · · · · ·	1015-10

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Part Part	Disposale (historic cost basis) (C Million)	5803-04	3084-05	2005-06	20000-07	29007-08	9009-68	3089-10	2010-11	2011-12	2012-13	2003-14	2019-15	2012-10
The particular of the partic	169 500		٠											٠
Thing in the partial of the partia	No.		4.20	200	2.0						92	2.0	20	2.0
1999 1995	Medium													٠
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No. of the particular and the	Infinite (targ)					- 1			-					
March Marc	LOBB		2	2	NZ.	200			200		200	200	NO.	200
1875 1875	Cumulative depreciation as at 1st April	2000.04			2006.07	2907.08	2008-09	2089-10	281011	2011-12	2012-13	2010/14	2014-15	2015-16
1871 1872	Gery Short		286.3		7.000.7			L						513.4
The control of the	Short		1.6	13.0	513									351.4
March Marc	Medica		1387	7.00	190									988
	Wedien long		187	200	7					ı				1804
Appelle Appe	CSUD states with a recommendation of the comment of		608.6	70.4	989		-	-		ľ		-		1,808.5
1.00 1.00						П	Н	П	Н	Н	П	H	П	
Marie Mari	Depreciation on base sassets (C. Million)	2000-04	3084-65	2006-06	20000-07	2900-0		2089-10	2010-11	2011-12	2012-13	2003-114	2014-15	3015-16
Page Page	Viry Shari		33.6	Ш	9.2					-				-
1.00 1.00		T	40		4.0									
140.2 1814	Medical toda		200		339								900	2.0
1000 1000	dion		544.5		888								21.5	21.5
Marche M	Total		110.7		170								45.6	45.6
1.00 1.00	Depociation on exect additions	20000	2354.05	2000.00	20000	2007.08	200.00	200910	110182	2011-12	2012-13	2002.14	2014/15	2015-16
1.600 1.60	in Seri		9	3	000				8008		8	350		940
1 1 1 1 1 1 1 1 1 1	Store		O)	52	12.9				200	I	25	52.4		640
1902 1903 1904 1905			2	42	9.5				102			32.4		014
Color Colo			8 9	1	2					l	1	200		0.00
Decision Decision	Total		67	22	40.5					П	250	1980		179.9
Application Application	Successivities telephysical on discount. 40 Millions	20000	2077700	9077690	0000000	0000070	0000.00	0000710	0840214	0014748	8048.48	00000.04	357700	0015.46
1 1 1 1 1 1 1 1 1 1														
The parameter interest of the parameter in the paramete	Stort		. 62	. 5	. 2	- -	ľ		100	. 9	. 07	.03	01	- 01
Marches Marc	Weden				ŀ	٠	·	•	•	٠			٠	
Company Comp	Wedn't long									•				
Application of contained disposed)	Food		2.9	12	10						1.6	2.0	1.0	1.0
1 1 1 1 1 1 1 1 1 1	Depreciation (tengons on asset disposal) - (2 Million)	5000-04	3084-65	90-9093	2006-07	80-0068			_	L	2012-13	90-03-04	Ш	2015-16
1	Sery Short		٠		•		·	•	•					٠
Second control to the part Second control	200		•	•		1	1	1	1	•	•		•	
Control of Lange for Purpose Control of Lange for Purpose 2000-04 2000-0	Medica loso				ŀ									
Colora during for the year. Colorado C	(000)		٠		٠		-				-			
Abert Abert 2003-Oct. 2003-Oct. 2003-Oct. 2004-Oct. 2004-O	Tour				٠	·	·	·	·					
March Marc	Depreciation charge for the year	10:000	2004-03	90-2003	10:500	000000	5009-60	2089-10	2010-11	2011-12	2012-13	2015-14	2814-15	2015-16
1 Short Marrowite Charge	Very Short		999	Ш	18.4							Ш	Ш	34.6
No. No.	200		00 00	Ш	18.4									94.5
117.5 113.1 103.6 20.0 20.0 20.0 20.1 103.0 174.2 103.0 174.2 200.	Medium Addition to the		750		20.5									100
117.5 113.1 150.4 171.0 50.0 171.0 170.0 1	500 1000		46.5	ı	28.0									47.7
Technology Persons Charge 2004-04 2004-04 2004-04 2004-05 2005-04 2005-04 2005-10 2015-13 2015-14 2015	COLD		117.5	П	100.6									250
1 COS. 108 ESS C16 ESS ESS C16 ESS	Inhiabucher Reseats Charge	3003-04	2084-85	305-06	2008-07	807,0083	5008-69	2089-10	2810.11	2011-12	8012-13	2012-14	2814-15	8018-18
	22		145.0	145.2	68.6	81.2	176	000		1000	8.900	1083	11000	115.6

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Historic Cost Asset Information

Chosing Net Beek Value (C Millor)	2803-04	2004-05	2009-08	20000-01	29007-08	2008-00	2009-10	0.00	21.4160	60.00.00	20000	2014-15	6013-10
Care Short		0.00	0000	40.00	ı	ı	L	0.40	2000	F	0.00	0.000	100
The second second		1		2007	l	ı		ı				l	
		1			ı	ı		ı				ı	a l
Western		485.0	400	498.9		ı		ı					9
Wedlers long		1963		1953									420.0
Out		1,580.4		1,693.0		П		П					2000
Include classif		41.0	282	78.4		П			165.6				2122
Inhaptic day Assets		2882		170.1									2237.8
Test		2,882.6		3,589.6	3,939.6	4388.8	4,793.2	6,040.0	Ш	8,638.4	6,003.8	6,413,4	4,809.8
Historic Cost Amortisation of Edisting Grams	101000	200	905000	0000000	12000	07900	2002-10	586044	2014743	8048.48	800000	2014-15	2015.16
Americanion of Estating Grants (31/00/2004)		92	77	77	72	2	IL.						
Mee Dunch													
	2000-04	3384-09	300000	2006-CT	2900-08	2009-09	208910	11-0105	2013-12	2012-13	2003-14	2014-15	3015-16
tan Shari		-	Ī		-				ľ			-	ľ
Short			1						,		1		
Medius			•	•							•	•	•
Medium long		•	1	•	•	•	·	•	•	•	1	•	•
000		e e	80	•	•	•	•	٠	•	•	1	•	•
minibe (land)		٠	•	•	•	•			•	•	•	٠	
Physical are Enforcement		•	1	•	•	•		•	•	•	•	٠	
Cotal Nave Cerents		22	52	·		•		•		•	•	٠	
Historic Cost Amortisation of New Grants													
	2000.04	3384-05	2008:08	2006-07	2907.08	2008-09	2089-10	11.0185	2011-12	2012-13	2003.14	2014-15	2015-16
Gay Short		-	-	-	-				-			-	-
250		•	•	-	-		-		-	-	-	-	
Vedera		•	1	•	•	•		٠	•	•	•	•	•
Wedn't log		•	1	1		,						٠	
000		9.0	10	0.1	0.1	9.1	9	120	20	9.1	0.1	0.1	ā
COURT OF COURT			1								•		
A PERSONAL PROPERTY OF THE PERSON NAMED IN COLUMN 1997 AND THE PER								1 2					
AND CONTRACTOR AND CONTRACTOR				5	5								١
Total Historic Cost Amortisation of New and Existing Grants.													
	3803.04	3384.09	2008-08	2006-07	2907.08	2008-00	200,10	2010.11	2011:12	2012-13	2012/14	2014:15	2015-16
Total Americation of Daysts		125	2.5	2.5	555	2.5	1.0	100	8	0.0	1.0	150	2
Defended Income in HC Accounts	2000-04	300+00	30000-00	20000-07	2000-08	2009-03	3089-10	2010-11	2011-12	2012-13	2003-14	2014-15	2015-16
Defensed Incame Opening Amount		17.6		12.0	14.7	12.2	8.7	878	8.6	8.8	8.4	6.9	63
Addition on year		50											٠
Anatistia		50		0.5	50	50	9	D.1	10.1		10.10	10.11	00:1
Deferred Income (Classing amount)		E.	1221	PA.C						*8			on on

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Giness Asset cost at 1st April (Cument cost), IC Million)	2000-04 2004-05 2002	2000	0000	9000	2000	OME	MIS	2012	8108	HIGE	SOUR
Very Stork		9000	ı	П	1257	9220	ı	L	ı	N.838	4600
Sted		2,099	l	ı	684.0	982.2			l	1,389.9	1,473.2
Motor		1,129.4		l	1,480.8	1,877.8				2063.1	2270.2
Ship multiple		234.6	ı	П	29075	451.2			П	677.7	748.5
0.07		2218.6		П	2,681,6	3,086.2			П	3,986.2	4,237.9
Delice Card		254.0			2087	385.0				481.4	430.7
Infoatruthus Assets		21,002.6			24,659.0	28,676.3				20,067.2	31,182.7
Total		28,405.0	20,729.5	28,152.2	80,087.9	30,384.9	20,740.0	38,308.7	30,978.0	30,778.6	40,656.2
World Statement of Second Broad of Millians of Advanced Con-	20 2000 100 100 100 100 100 100 100 100	2000	2000	10000	1000	10000	100				
TOTAL MODERNIA TO MODEL DESPLICE MINISTER CONTINUED STORY	COMMON	500000		2	-0.00	2000	21 122	200	WINDLESS.	01410	111111111111111111111111111111111111111
Very Short		25.5	30.8	38.5		30.0	585	28.1	38.1	39.5	40.4
Sec		8008					280.1	3		78.1	77.4
Li gale		9		ı	ı		9			2	8
Septiment of the septim		101		ı	ı		910	Ŧ		ž	0
200		130.9					114.0			1000	24
Make Sard)		991						4		2/1	17.8
Introduction Personals and of Grants		200								1122	1356
Indigitable Establement		110.9			180.8			900		184.6	1902
Total		604.3				5005			6999	788	738.0
Ostponski (2005-96 priced) (C Million)	2003-04 2004-05 2008-06	2908-60	2007-06	2000-00	28095-18	2010-11	2011-12	2012-13	2010-14	2014-15	2015-16
Nev Stock						٠					
Stort		0.0	93	2.0	2.0	2.0	0.0	98	2.0	3.0	2.0
history					٠					٠	
Medium lang		٠				٠					
S. C.		٠									٠
(Authorities (Build)							٠				٠
Total		50	92	53	2.0	20	50	2	50	50	50
Disposals (Residuation) (C Villion)	2003-04 2004-05 2006-06	2006-07	2807-08	3000-00	2000-10	2010-11	20115-12	2012-13	2010-14	2014-15	2015-16
Very Stock											
1000		170	100	0.2	0.3	0.3	970	69		90	0.7
Modeum		-	-		-	-	-	-	-		-
Medium tong		٠		٠							٠
0.07											
Infinite (and)											
Total		0.1	0.1	0.2	0.0	0.0	0.4	50		970	0.7
Cost Neveragon in the year (C Malon)	20000 20000 20000	2000-00	2001108	2000-00	2000-10	2010-11	2011-12	2012-13	2010014	1100	2015-14
Very Stork		1.5		3.4	4.5		69	Ш		976	124
Det		1.01		24.2	999		1700			40.0	44.2
MANAGERIA		33.0		40.0	43.5		909			61.0	683
Medium tong		7.0		10.1	11.7		16.0	П		80.3	22.5
0.07		999		28.5	64.9		87.8	П	П	1180	127.1
Infinite (and)		974		2.0	8.4	97.1	876	10.5	112	19.0	10.9
Infrostructure Assets		667.1		298.7	120.0		800.1			0887	90400
Total		782.2	601.9	674.5	919.7		1,842.2	П		1,163.4	1,219.7
Cost Reviewton Curulative		3803	0.808.0	2,488.8	3,418.3	4,386.3	5,396.5	П	7,568.9	8,730.2	0.000.0

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

Commission Deproduction as at 1st April (2 Million)	2003 2004 2005-08	2008-07	2007-08	20000-08	20,409.0	3000-1	20115-02	2012-13	2012/18	2010-112	2010-16
Very Short		5701	9.00	63.2	8778	189.2				288.4	310.1
Shot		2007.7	461.9	536.5	0.000.0	221.5				1,042.5	1,120.0
Modum		0.000	120	282	213	0000				1,410.1	15885
Sug Lingelly		9 17 10 10 10 10 10 10 10 10 10 10 10 10 10	9 2	100	1.084	1207	ı			1 1000	0.000
Mindredum Assets (RC)			290	182.5	200	SELE	480	616.1	742.4	611.0	0.000.0
Will adjustment Train		20000	2 381.0	2 408 0	2 844.7	X 101.5	3,858,5	3,800 8.	- T 200 2	4,600,0	. 111.0
							П	Н			
Called Cost Deprecation- Charge in the year exchang WP (x Million)	2303-04 2004-05 2303-04	2000-07	2007/08	2000-20	2000-10	2010-01	ST-STAR	SULP	MI-COME.	2014-12	STATE OF
Nety Stock		991	192	20.4	24.0	31.4	980		23.6	282	N/S
200		198	292	74.7	840	0.00	080		51.4	90.4	2000
Modern		803	200	38.2	n in	200	87.7	8 6	100.5	1878	115.6
0.07		46.1	600	64.3	86.3	881	1.09		31.0	38.7	80.5
Wip Adjustment		. 00	. 0	. 000	. 80	. 000	. 300		- 600	. 000	. 200
1000				- Table		-	-			and a	10000
Depreciation (sitrahrated on disposal). (CMIllion) - (2005-86 prices)	2003-04 2004-05 2005-04	00-9066	2007/08	50000-00	2009-10	2019-11	2011-12	2012-13	2010-14	2014-15	2015-16
Very Stork					٠		٠				٠
Sect		01	1.0	10	10	10	10	1.0	10	07	10
Modern Modern		-	-			-	-	-			-
The state of the s											
Total		1.0	1.0	1.0	1/0	1.0	1.0	1.0	1.0	10	1.0
Depreciation devakation eliminated on disposal 12 Millord	2007-04 2004-05 2008-04	00-8068	2007.08	5000-50	31-5002	10100	2011-12	8018-19	2015-14	2014-15	31-5165
Very Stork											
Direct		00	170	0.0	0.0	20	20	20	0.0	0.0	0.0
Modern		-				-				-	
200											
Total		000	10	57	0.1	20	50	2	6.0	6.0	3
Osprodadon Tenskation (CMIRon)	2000-04 2004-05 2003-04	200000	2007.08	2005-29	2008-10	11-0102	2011-12	8018-13	2012-14	201415	201516
Nery Stort			1.0	63	2.5	000	6.5			8.0	8.0
Short		115	13.6	15.9	18.6	21.0	38.0			21.2	340
Modum Modum		17.1	19.4	8113	24.6	27.7	910			42.5	47.1
0.0		0.00	16	100	36.0	30.0	417	l	l	20.0	980
Hospitalian Assets (RC)		·		F	45	911	18.0	2	22	×	CX.
Curulative Depreciation Revaluation		900	6000	212.6	200.4	450.4	9000			1726	1,170.7
Infrastructure Reserved Charge (PRC) & Million (Clafforn)	2002 04 2004-05 2009-04	2008.00	2011.08	2005-39	20,96,00	2019.11	2011-02	2012-13	200014	201018	2015-16
180		9999	818	64.0	879	86.7	10007	106.8	108.9	112.2	115.0
Met Book Value 12 Millord	2003-04 2004-05 2003-08	2008-02	800708	2000-00	3039-10	11-0108	2011-12	80-8108	2015-14	2814-15	31518
Mary Stock		997	0.80	6.80	82/8	84.9				8578	8970
Short		879.0	CNE	204.1	2007	225.0	201.0			2967.5	356.5
Medium medium		0,100	97909	609.5	5.555	650.7	646.1	Ш	Ш	2000	6888
Supplied to the supplied to th		15004	900	1,000.4	1,773.6	0 1001	1876.6	ı		0.085.0	0.000
Minite (and)		0982	22	É	3880	18.0	165	Ē	404.4	1307	7 7
With adultimat		0.000	1200.2	PA.077.0	DOM:	28,172.9	0.0000	ı		30,142.0	01227.0
Total		28,379.6	28,430.8	67/00/12	25,096,5	20,696.3	38,790.0	21,958.4	33,254.1	34,534.4	35,585.4

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Asset Information

New Greats' jouthern pricest	2002 04 208600 2002 0	2338.67	2807.08	2000-39	3030-10	2019-11	2011-12	2012-13	2000	231413	2015-16
and have			•	•	•	•	•		•	•	٠
Stock		-	-	-	-	-	-	-	-		
Modern			-				-				
State of the state		-	-	-	-	-	-	-	-	-	-
No.		٠									٠
Marine Cavel		٠				٠	٠	,	٠	٠	٠
INTRACTOR ENTRACEMENT		٠			٠			,		٠	٠
Total New Grants					•						
 All grants provious to 1st April 2085 are considered as part of the MEAV value. 											
Ameritation of grants added in period	2903.04 2094.05 2909.08	2008/02	2007.08	3005-30	2030-10	2010.11	2011-12	2012/13	2002.14	2014.15	2015-16
Very Short					١					٠	
Stort		٠									
- Laborat		٠			٠	٠		•		٠	
Medium land		٠			•	٠	٠				
25		٠			٠						٠
Make											
Infraghables Estimosment											
Total					٠	٠	٠				
Cumulative Americanies of new grants (Cument Oost)	2003-04 2004-05 2005-05	09-9060	2007/08	5000-00	2009-10	3010-11	2015-12	8018-19	2010-11	2814-15	3915-16
New Street											
3,000		٠								٠	
Uriginal Control of the Control of t					1	٠					٠
gual myddin		٠			٠	٠	٠		٠	٠	
D.O.		٠			•		٠				
Minite (and)						٠					
Hitselfucture Assets					•	٠					
Total							٠				
Total Americation of Drants (Current Cost)	2003-01 2004-05 2009-08	2006-07	2007.08	3000-38	2009-10	2010-11	2015-12	2012-13	2010/14	2010-15	2016/16
Total Americation of Charles			-	-	-	-				-	-
Deferred Income and Current Cost Reserve	2003-04 2008-05 2005-04	2906-07	2807/08	3000-00	2009-10	2010-11	2015-12	2012-13	2000-14	\$1-9185	2015-16
Defende Income Opening Amount		٠			٠						٠
Defenned Income Opening Amount (Revalued portice)						٠					
Addition on year						٠					
Anoritation				•	•	٠		•	•		
Defendel income (Diceing amount)				•	•	٠		•	•		
Smart or Carred Cost Beancos			,								

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2008-10 Process Sheet: MEAV Depreciation

Reported MEAV for Scottish Water (X Million) April 1st 2006		24,399.6										
Cameri assets		Acres Rate	or par	Aus Bage o								
Series Since		20.0%	K	Ш								
100		10.0%	Z	Ш								
Medical Modernal Section		100	E P	9007								
0.00		200	Š	l								
antistie (LANC)		400	145	П								
aliteath.ch.mp		ш	80%	21,900.6								
		Total	TRUE									
Asset Additions (C.Milloro)	2000 04 208405 2009.08	2008-07	2007-08	3365-00	2009-10	2010-11	2011/102	2012.13	2012/14	2014:15	Н	80-5102
New Street		L	33.6	28.5	l	l	l	l			200	404
State		800	919	6.83							ē	77.4
Medium		63.0	900	75.0							26	80.8
Motor and		130.6	1000	138.1	1493	100.0	20.6	138.8		148.3	1004	100.0
Total		313.0	107	268.5	Ш	Ш	Ш				1.00	1111
Depreciation on existing search (Base year: 2005) 15 Millon)	2000-04 2084-05 2008-08	2008-07	93505468	2005-020	2005-10	MARK	2011-12	2012-13	2003.14	1 2014-15	Н	2015-16
Wey Store		13.6	13.6	179								
Stort		545	245	24.5	515	545						
hidin		980	980	250	26.0	000					980	8
grain in g		92	7.0	7.0	7.6	7.6					7.6	97
Total		175.6	125	168.9	160.0	1800	106.5	108.5		185.5	1000	108.5
Depreciation foregane by the dispessal of assets palls). (C Millan)	2003-04 2008-05 2008-08	2008-07	3000.68	3089-30	2009-10	2015-11	2015-12	2003.03	2013/14	3016.15	Н	2015-16
Nery Short							-	ľ				
Shipting Shipting									-			
Medium lang		٠			٠	٠			ľ			
0.07		٠		,	ı	٠				1		
Total		•	•	•	•							
Depreciation on existing essets (treatmed). It Million)	2003-04 2081-05 2003-08	2008.00	535556	305.00	2036-10	114116	201102	200203	2813/14	801418		2015.15
Wery Short		040	14.5	2.4								
Shot		0.00	8.09	9.60	81.0	400		ı				
The last		900	980	200	84.1						200	7
San Lineau		100	1	207	420	l			l		2 2	200
Total		176.6	1942	162.3	180.1		138.0	1827		133.6	27.6	N.S
Decretation or addition to the user of Millions	2000-04 2000-08	2008-00	2000-08	3768-39	2009-10	2018-11	2011-12	2013-13	2003014	3014.18	ŀ	2016-16
					90	ı		ı	۱	l	ł	ŀ
Store		2	12		100	l			l		2	2
Medical		9	9	7	7						E I	2
Medical lang		8	9		0 0	*00			202	80.0	92	
Total		820	8.8	18.5	11.6						E L	121

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: MEAV Depreciation

Mary Shott Shott Shott		ABOUTOR ADDRESS ABOUTOR	OUTUR ADDRESS.	┪	2000-00	2009-00	Step-10	TOTAL PROPERTY.	20.1.12	2012-12	2012-19	401410	-
Stot				2.5	98	455	294.0	31.4		282		35.7	27.1
Sloding				5.5	60	15.1	28.7	287	30.0	40.2	50.4	60.4	
				97	13	90	13.2	472		980		34.7	40.1
ded my leng				979	1.6	2	4.1	80		22		92.4	
0.0				2	93	2	42	916	924	188	180	51.1	
celif			l	2	0.12	187	72.2	94.2		136.0	143.4	162.4	
VP adjastment (Depredation on assets commissioned after 1st April 2086)	2803-04 30	00-00	00-00 3000-03	404	9903-08	9009-00	3069-10	11-0102	2911-12	2013-13	2013-14	2010-15	2015-16
eposition												٠	
ament Cost Armani Depreciation Charge III Millioni	2805-04	84.65	905:08	20900	200708	2308-00	2009-10	281611	2011-02	2012/13	2013-14	31415	2015-14
ery Short	L		ŀ	984	132	100	880	8.4	ı	ı	988	7.85	A16
Total				ĹŔ.	79	74.7	54.0	92.0		45.2	50.4	90.4	200
Mellon				5973	94.5	707		82.2			100.5	187.8	115.4
Address time				3.4	6.7	11.1		14.1			18.8	20.4	20.3
0.0				44.1	47.7	613		99.1			27.4	28.7	808
otal CCD before IIIP adjustment				187.2	2112	230.7	282.3	209.7	236.9		277.8	380.0	325.4
VP adjustment												٠	٠
ODB.				4870	or Ea	1007	200	2087	5365	155.0	277.0	280.0	100

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Interest Payable

Entheddied Debt Opvenneers & Non Government (CMIllion)	2000-04	2084-02	9002-00	2006-07	2807-08	2000-00	2089-10	2019-11	2011-12	2010-13	2013-14	2014-15	2015-16
35.3.000		0.07	200.4	0.000	000	DAG	0000	20.00	900	100	100	000	900
A COMMON OF THE		2 000		1	l					L		0.000	
		2000	2000	280			1000	0.00		1		2000	200
Pri chers.		208.6	208.6	238.5			303.9	300.6				2887	230.0
B10, 0, 0000.		138.4	131.4	101.4			1297	128.4				111,4	108.4
できない。		483.6	-016.9	5,812			466.7	3860.0		L		2657.0	367.0
Brit. 0.500s.		9.80	2.00	7.00	L		9 80	9.85		L		9.00	600
760 0 000		0.004	1 777	2 257	L		9 00 +	9 809		L		0.00	200
00000				100	l		5.00	100		l		0.00	
N. W. TOLKER TO.		100		1	1		100			1		1	
11.9-11.00%					1		2			1		1	
CHECK		1	1	3			3	1		1		1	1
25-1185		8	3	9	3		0.0	õ				000	3
W-4/26	_	9.5	20	2	20		0.2	2		Ц		00	0.0
Total Endoeled Debi		2,192.8	2,027.4	1,998.6	1,897.0	1,829.0	0.787,1	1,487.5	1,612.5	1,598.5	1,998.4	1,481.0	1,387.8
Embedded Debt Due for Repayment (E Willon)	10:0062	3064-85	9009-000	2006-07	2807-08	20000-00	3089-10	2010-11	2011-12	2810-13	2003-14	2014-15	2015-16
		100	ŀ		L	0.00				l		I	Ī
0.000				Ī		200	0.80			l	8		
50-5000 500 0 0000				1			200			l			
ON-ONLY			1	·			223	•		1		3	200
25000		20				02	30	•	9	2	000	20	
25,1385,		18.7	11.7	98		10	10.7		99		20		14.0
200 C C C C C C C C C C C C C C C C C C	_			-				-				0.0	
PU-0.09%		18.3	101	28	10.8	63	0.3	0.3	26	3.6	180	192	287.1
30% 10 88%		17.4	14.8	7.8		87.0	14.0	288.1	4.8		1.8	57	12.9
111111111111111111111111111111111111111		0.0	16.7	9.0		2.5	0.6	9.7	-	L	80	9	4.0
1000				Ī		:				l			Ī
2000				Ī								1	1
CONTRACTOR OF THE PERSON NAMED IN COLUMN NAMED				1			•			1	•		•
And the Controlled to		•			٠	•	•	7		·	•		•
1000		188.4	/423	9780	000		00.4	67/3	100.1	177	9074	2775	78.5
										-			
Propagation by Type It William	2800-04	2064-09	Ř	ě	"	2008-00	2009-10	2015-11	ш	п	B12514	2012-16	2018-18
Garanmant Loans		1500.7	802	03.4	ш		9709	0.00	ш	ш	54.4	9700	28.6
Non Government Loans		12.7			ш	П		174	Ш	7	П	970	٠
Total		165.4	l	l	ш			67.09	Ш	100	П	202	78.5
Check		THUE	E	Ē	TRUE	Ĕ	F	THE SE	THUE	THUE	E	THUE	THURS.
Manual Payable on Bribedhad Dold (CMB)(ct)	Avg. False	3009-00	3008-08	2008-07	2007.08	3000000	2089-10	2010-11	2011-12	2012/13	2013-14	2010-16	2015-16
PN-2.00%	250%	ı	1.1	1.0	L			(8.8)	L	ı		ford	10.00
500 F 100 F	+50%		200	*16				207.3	100			540	59.4
38.5.385	250%		187	183				16.5	16.1	П		14.5	13.9
55.6385	5,000	ı	6.5	6.5	ı	92		4.2	0.8	ı	ı	12	63
74.138K	1885		28.4	31.6				28.5	260			98.6	9.5
PC-8.09%	6888		7	ž				7	24			25	24
250000	9000		14.4	200				100	1			92	20
300-30305	10.56%		14.8	12.6				\$	4.3			34	53
115-11.00%	11.50%		27	2.0			0.8	10.7	9.0			0.4	0.4
1274-123095	12,56%	9.3	0.0	6.0	0.3	0.20	0.1	977	170	100	0.1	0.1	0.0
1274-13 (894	13,59%		0	170			0.0	0.0	00			0.0	0.0
100-11-001	14.69%		0	99			0.0	0.0	99			0.0	0.0
Total Interest Passable on Embedded Debt		136.0	100.6	5.003	118.0	1880	108.0	100.0	7 90	578	808	997.0	617
										l			
Manual Rate	10:0082	500 to 50	3009-98	2008-07	2807-08	20080-00	2089-10	3015-11	2011-12	2815-13	2013-14	2014-15	2015-16
Polosoni rafo		A 6000C	DWBA	4 80%	4.00%	4.0095	20000 F	74.00.00	4.80%	4.00%	4.6090	A KING	AGONE
FORTING THE		TOWNS OF	Brown,	1000	1.000 10	A WAR IN	Promotive Control	Posterior.	TOWN THE	1.000	NAW IN	- Long-Lin	- COMPANY

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Interest Payable

Cost of Cupits' Aspatraget	10:5082	2064-03	2005-04	2000.07	2007.08	2005-00	01-6802	2019-11	2011/12	2812-13	2012-14	201415	2013-16
Cost of Debt tore-taxifor cost of capital palculations	L			4.80%	4.00%	4.68%	40000	4,00%	4.00%	4.00%	4.00%	4000	40005
Embeddied Debt Interest Playable using CoC Cost of Debt (pre-tim)				88.63	65.70	52.27	78.89	6000	72.98	70.40	58,62	26.55	55.47
Difference with actual interest payable				23.54	22.30	38.70	59.19	27.24	25.43	24.16	22.87	21.38	19.22
New Debt Assumed 18 Millions	10.0088	3064-85	9009-64	1008000	3807.08	3000-00	3089-10	3019-11	2011-12	2810-13	2013-14	2014-15	3015-16
New Debt Required		500.6	1997	1760	816.0	2002	0/80	1700	999	9999	SAR	0/250	5000
Princett	10-5065	3064-00	3000-00	2006-07	900,000	2089-09	2009-10	2018-11	2011-12	2810-13	M1-0100	2016-15	2015-16
Interest Payable on New Dobt Oxfore Sentions			100	98	918	4	980	28.8	0.00	97.0	2.78	100.5	100.0
Interest Payable on New Debt (Nextilans anijo)		6.0	**	7	9*	0.0	24	44	13	0.4	e	22	-
Cumulative Interest on New Debt		0.9	1774	503	980	47.5	623	94.9	60.3	31.6	1020	1940	128.8
Prienal before tax adjustment		141.0	1481	230	153.0	180.5	120.5	6229	1017	186.3	6.284	6,000	204.5
Adustriants due to fair charges								,			٠		
Total Interest Payable		141/0	145.0	2.004	155.0	180.5	120.5	127.0	101.7	196.5	192.0	500.9	208.5
Barations to calculate new debt reguland (C IIII Ear)	50005-04	2084-00	90-9006	2008-07	2007/08	3000-00	2089-10	2019-11	2011-12	2815-13	2003-14	2014-15	2015-16
New delt before rated up interest (before tax)		089900	(B) 14(B)	0.08.80	(1987)	078620	00110	1166.85	(1006-89)	(1986.5)	(CB8.2)	9390	1258.40
Becation to infinity		(300.00)	(208.4)	(1004.1)	(300.5)	(0000)	0000.00	108.30	(348.8)	075.9	(000.5)	(0.140)	204.5

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Cost of Capital

Cost of Capital Calculation

	20000-07	8000-00	60-9065	00-6000	2816-11	2011-112	2015-13 2015-14	2010-14	2014-15	2015-16
Cost of Debt (pre-tax)*	4.60%	4.60%	4.60%	4.80%	4.60%	4.80%	4.60%	4.60%	4.60%	4.80%
Cost of Gq./by	127	329%	3.20%	3200	322%	Ser	320%	127	328%	120
Genérig ratio	2000	50000	2000	500.00	5005	C4 DOT	10000	20022	2000	90000
2099	418	4125	Alla	4025	ALIS	4153	4125	4123	4125	4120
					Ī	Ī				
Cost of Capital Certimo educatmental	1917	196.0	161.6	1985	212.1	4,022	237.5	200.6	271.4	2,002
Adjustments due to Entheabled Debt (Onli	9000	203	人芸	297	20.3	287	24.2	422	21.4	18.2
					Ī					
Adjustments due to Retail Wholesale Competition Cost of Capital (Circ)										
Dost of Capital (Gri)	185.50	100,30	812.20	2027.466	VE.0035	240.04	201.64	50,000	200.80	300.43
Does of Capital 154	5.04%	4,00%	4.81%	4325	4,65%	4.50%	4,545	440%	4,44%	4305

* Dost of Debt is entered pre-tax to prevent double-counting of the tax shield in the revenue requirement

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Calculation of RCV

E Million	90000-00	2006-07	200007-008	20080-00	2008-10	2010-11	2011-12	28000-13	2013-14	2014-15	2015-16
Opening ROV	1296.6										ı
Chostra, MCV (province year)		3,519.8	1,847.6		4.808.1	5007.5	5,007.2		5,950.1	6,277.8	4,000,0
Indexidion		70.4	27.0	54.3	1.00	180.8	106.5	111.7	119.0	127.6	108.2
Opening RCV	3,794.4	3,590.2	3,804.7		4,095.3	5,138.3	6,372.6		6,959.1	6,585.3	6,944.8
Capital Eupendium		4098.1	801.8	539.4	0.000	489.9	461.2		80.0	604.6	(000)
Pain-Inhastracture Assets		308.1	350.0	304.8	411.0	588.7	313.5	364.1	600.3	480.0	9.003
Infrathuture Enhancement		110.9	546.7	164.5	8 OB5	135.1	607.8		179.3	186.0	198.3
Inhastructure Ranewals Expanditure		250	9	Š	9785	99.7	100.7	1850	108.9	1655	115.6
Grants and Contributions		٠		٠				٠		٠	
Oppression		200	2112	2007	2	2007	0.00	0000	707	2000	1
Opposition		167.2	2112	7,002	252.3	228.7	6962	2960	2070	3800	325.4
Demokration of Capital Garden										٠	,
Inhapprotine Renewals Chape		66.6	91.2	94.0	999	99.7	100.7	1858	108.9	110.2	115.6
Disposal of Assets		1.0	1.1	1.1	1.1	120	1.00	9	13	13	1.3
Outperformance of regulatory assumptions	(374.5)										
Closing ROV	3,519.6	0,047.8	42143	+,000.1	\$300.5	20172	1,988.7	5,000.1	6,377.8	0.080.0	12407
Average Year RCV		3,083.8	4.031.0	4,410.2	4.821.6	5415.54	2435	671170	6,163.9	0.0000	100

(1) Captal Grants starting from 2004-07, earlier captal is included in the RDV

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Operating Costs

Maker Than Departing Core (2009 My prices) They are Changes to Date Operating Cest (2005 My prices) They are Total Dear Coverting Cest (2005 My prices) They are Changes to Date Coverting Cest (2005 My prices)	H		Ī	i	Ī		Ī	l			Ī	Ī	
Base Operating Cost (2005 No Year) Demander Changes to Base Operating Cost (2005 Of priorit) Mental Total Read Operating Cost (2005 Of priorit) Mental Total Advantages to Base Operating Cost (2005 Of priorit)	t		1	Ī									
Jones Chokenz Trapel Jones in Halton Incomment on Discourcy Trapel Son Data portlant	25 25 E	5 - 5 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T	E - E - E	202222	200 P 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	200000000000000000000000000000000000000	200	200 B 200 B	E2500273	200 200 200 200 200 200 200 200 200 200	200	100 100 100 100 100 100 100 100 100 100	100 mm
Men Cyterative (Code) Resident to to - the County is furnishment Program as (RIDI) (It prices) - security of suppriving Code (a price) - alternative control colors (Code (April 1998) - alternative control colors (Code (April 1998) - alternative control colors (Code (April 1998) - alternative (Income Code (April 1998) - alternative (Income Code (April 1998) - and control lessels of control colors (April 1998) - Annual Code (April				22223388	22223222	2832232	28858985	2837292	22.,27000	232222	28352238	28827932	
Total Water Operating Costs (authori)	186.7	194.0	1981	585	155.6	157.5	HEE	6994	UR3	100.7	12721	19807	164.3
Structupe Base Capusing Cost (2006 big zhone) Personant Caraona to liste Coentino Cost (2006 cit prices)	1343	20.	136.3	200	282	1943	136.3	198.3	194.3	134.3	1963	198.3	200
Revised Yotal Sase Operating Dost (2005-50 prices) Influion Adjustment to Base Descriting Cost	1942	243	1941	1000	1007.1	127.1	187.1	1407.1	123	120.1	1977	1007.1	1007.1
Jan. Biolong Tagat Jan. Hillor Incoment on Dicensy Taget		28	ća i	82	929	92	200	826	878	825	920	979	87
10000 000 000						1	1						
Men Cleaning Code Malding to The College Services Programme (1992-10) priced to cache (1992-10) priced Mountain New College (1992-10) Mountain New College (1992-10) Mountain New College (1992-10) Malding Malding (1992-10) Annual Services (1992-10) Least Services (1992-1				000000000000000000000000000000000000000	285272233	25228888	87155355	87728759 97728759	82246223	227722223	8 11 12 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	825555000	27547753
Total Sewerage Operating Coets (outsin)	120.7	420.6	112.1	2015	1311.1	1963	130.5	101.1	1997	136.4	136.1	141.9	1987
Meter Westernie FW Constitut (2015) dispersed FW Constitut (2015) dispersed Peters (2015) for EW Constitution (2015) February (2015) for EW Constitution (985	25	25	252	918					
Operating Costs (sechading Depreciation and Americanism) (outbury)	57855	175.4	236.1	1757	277.5	0000	0000	200.1	6.000	248.0	2000.2	5000	9387

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PT Chaps (2005-06 prios)
Prison (Submerlie PT Chaps
Lond Et berg Taget or PT
Lond Shallon Proment on Eticonog Taget on PT
Test PT Change (outburn)

Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Current Cost Reserve

Bollot Current Cost Reserve									
	3045-06	_							
Opening MEAY 1 April 2006	24,380.0								
Closing NEW Fleed Assets that of counts)	2,191.2								
Initial Current Cost Reserve (2006-07)	24,183.3								
	3009-00	2086-07	3007-08	3089-31	2008-10	2019-11	2011-12	2012-13	2013-14
				I				l	
Opening Dunest Cost Reserve		21,192.3	11,000,1	22,581.6	2	ă	Ú	8	8
Frood Assets Adjustments		ř	788.4	9350	ı	ı	Γ		ı
Working Sapital Adustments		2.0	(2.40)	17.0	(2.2)	620	520	12.50	(2.6)
Financing Adjustments		(1.0)	14.40	628	П	ı	ı		П
PP1 Appendix and collection to		=	1.1	1.0			1.0	0.0	0.0
Charles and Third Party Cardibulans Adjustiments				-		-			
Carrent Cost Reserve		21,609.1	20,460.8	23,467.6	24,2998.0	28,1982	28,080.3	26,604.7	27,0803.6
Working Captal Adjustment	0.000								
	2085-96	2006-07	9067-90	2000-00	2909-10	2010-11	2011-12	2012-13	2013-14
Stocks	3.8		4.2	4.3		4.5		П	
Trade Debout	78.1		282	284		284	П	П	
Propayments and Acaraed Income	810	П	54.0	853		0.00	П	П	П
Shorr-term Trade and Capital Creditars	162.0	136.0	150.0	162.1	138.5	1004	141.0	157.6	138.2
Aconais, Psyments received in advance, taxes and social security	184.5		112.7	115.0		480.5	П	П	П
Total Working Dapital	14071		1132.63	(140.0)		(116.1)	П		П
Total Working Dapital Adjustment Onflation times opening amount)		100	(2.4)	III.	(2.3)	(0.0)	980	570	(2.6)
Financing Adjustment									
	3061-90	2086-07	3007-60	3089-00	2006-10	2010-11	2011-12	2012-13	2013-14
Net Assets Employed	34,088.0	ı	25,998.3		8271728	28,191.9	30,000.0	L	32,004.6
Net Operating Assets (excluding PP) assets)	242349	25,227.1	26,283.8	27,354.6	28,502.3	78,538.1	30,633.7	P	ľ
Difference	(1960)	П	(367/80)			ш	(384.0)		
Total Francing Adjustment (Wilefon Even spering amount)		П	ш	П	П	Ш	100	П	8.20
Grants and Third Party Contributions									
	2002-002	2086-07	2007-00	2009-00	2008-10	2010-11	20H-12	2012-13	2013-14
Grants and Third Party Care/bullans					1			1	1
Commission of the Commission o								J	

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Water Industry Commissioner for Scotland Financial Model - Water Industry Commissioner for Scotland Process Sheet: Capital Allowances

Capital Allowances releas	0.000	2000	0000	0000000	9000	0.000	10000	000	0.000	1000		100
	TOB-STD	2000	Non-di	S C	200		MIGHT	21-12	DATE-TE	N. FEB.	-11	9
Plant and Michinery Short No. Non Pari 25 poers - eforegree rate probability belance.	2000	5000	2000	п	П	п	П	M.	п	M.	28.00	28.00
Part and leadming to the receiption of the control	4007	1007	4.00%	400%	4000	1007	4.00%	4.00%	1007	4.00%	4007	400%
				ı	ı	ı	L	ı	ı	l		
Appendionments of Capital expenditions	-											
	20+900	2005-06 2005-07		2007-06	2008-03	2002-10	2810-11	2011-12	2810-11 2011-12 2012-13 2013-14	H-4108	2014-15	2015-10
Work in Progress (Opening Amount)	680.46	200.00	400.44	8773	636.20	87789	608.86	ш	983.56	099.67	640.75	679.77
Total capitalised expenditure including I Pic (cutturn prices) excluding grants*	513.30	630.50	534.33	107 DBS	600.33		П	583.90	600,000	201,190	316.60	788.58
Percentage Transferred (Opening WIP + Capes)	SHARK	70,000	20.00%	900000	20.00%		Ш	ш	58.80%	50 BON.	SE SON	MODIF
WRP Transferred (Chr.)	404.69	881.03	477.39	5553	201.20	ш	۳	983.99	588.67	642.75	679.77	20904
Masons qualifying for 100% first year allowances	0.00%	9000	0.00%	0.00%	0.00%	0.00m	0.000	6 80%		0.00%	0.00%	0.00%
Assess to be industed in the general CRPID post	2017	43.28%	40,28%	43.38%	40,28%	Ш	40.09%	43.20m	7	43.39%	43.39%	43.39%
Assets qualifying for long life (Phi) pool	30.49%	20,04%	20,54%	29.54%	20,54%	Ш	20.50	28.54%	28.54%	20,5575	28.54%	29.54%
Assets qualifying for industrial Buildings Allowance	0.65%	910016	9.87%	9.00%	6.67%	ш	6.87%	1870	100	100	147%	9.07%
Assets Puchased under finance leasing	20000	0.0000	50.00%	0.000%	10,00%	0.00%	0.00%	1000	1,00%	4.80%	4.00%	0.00%
Capital and revenue expenditure deducted in year of spend	0.00%	90000	518010	0.000%	548010	D.BOTIL	0.00%	5 DON:	T-BON-	0.80%	4,00%	4,00%
Capitalised revenue expenditure depreciated - non infrastructure	0.68%	0.94%	2000	0.91%	0.91%	0.91%	0.94%	6.91%	1315	4.91%	4315	0.91%
Capital and revenue expanditure depreciated - inhaelsuciare	0.00%	0000	14.40%	HARDS.	14.48%	14.40%	14.40%	14.40%	14.40%	14.40%	14.40%	14.40%
Capital and revenue expenditure not depreciated	0.00%	54000	5,800	90000	2000	0.00%	0.00%	6 DOTS	1,00%	1,00%	1,00%	0.00%
Other specified qualifying for capital allowances or revenue deductions	51225	20400	5,002	20005	2002	2.00%	2005	2.00%	7,007	7667	7007	5007
Charts and Contribution tendes on receipt	0.00%	5,000	54800	90000	5,000	0.00%	0.00%	4000	P-904	0.80%	0.00%	0.00%
	100 001	180,00%	100,00%	100,00%	100,00%	100.00%	100,00%	106 001	106.80%	100.00%	100,00%	100,00%
108% Allowances or Capital expenditures deducted from healing profit												
	3064-05	90-9066	2006-07	2007-08	2009-03	20089-10	2004-05 (2005-06 2006-07 2007-08 2008-19 2008-10 (2010-11 2011-12 2013-13 2013-14 (2014-15 (2013-16	2011-12	2013-13	2013-14	2014-05	2015-16
Montron						-			-	-		
Short the assets (20%) pool												
	3004-05	2005-06 2006-07	2006-47	2807-08	2009-03 2009-10	2009-10	11-0105	20115-12	2011-12 2013-13 2013-14 2014-15	2013-14		2015-16
Opering Balance	2000	511.8	202.0	400.7	0282	700.4		236.6	288	748.0	48.6	1883
Addition	1192	404.6	9300	201.6	6753	932	П	0.045	792	2,912	78	283
Mountain	100.6	240	277	280	986	284.6	999	100	MOT	132	288	502
Cloring Delence	8118	102.3	581.1	0880	700.4	234.3	П	2005	243.0	465	1387	523.5
Lang Life Assets (DN) pool												
		90-9065	2006-47 2807-08		2009-03 2009-10		2810-11 2015-12 2013-13 2013-14 2014-15	2011-12	2012-13	8013-94	20-94-02 20-94-02	2015-110
Opening Balance	100	1.180	9734	4.000	1,009.6	1,472.41	1,280.5	1367	1,440.0	1,517.5	1,604.7	1,687.2
Adding	131.5	200	141.0	8	172.6	1981	100.5	188.0	Н	000	200	208.4
Alceaces	40.5	283	200	683	- 122	41.0	87.5	919	Н	100	106.3	14.4
Chang Brience	1.188	915.6	9804	1,079.6	1,177,1	12883	1,385.4	1,440.0	П	1,804.7	1,6907.2	1,792.2
Industrial Buildings (straigh) final												
	3066-05	90-9086	2005-06 2006-07 2007-08	20007-08	2008-09	2009-10	11-0185	2011-12 2012-13	2012-12	B013-14	2014-05	2015-10
DA daine Base year 2005-00	633	489	940	43.9	940	14.0	П		13.9	188	13.5	133
Vere I E sanets	200	88	47.	2	244	639	П		285	53	100	Ē
Alberton printe EA meta	19	2.0	13	9.4	11.7	14.5	16.5	167	51.1	992	383	1987
Total Industrial Building Monaphons	18.6	19.3	21.3	23.3	785	282	П		38.0	37.8	46.2	43.0

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Water Industry Commissioner for Scotland Financial Model - Water Industry Commissioner for Scotland Process Sheet: Capital Allowances

	20099902	90-9065	2006-07	2007-08	3009-63	2009-10	2010-11	2011-12	2012-13	3013-14	2014-15	2015-16
Total Monances	50005	2110	201.6	9388	1000	384.9	2000	9009	1005	2555	403.6	455.0
Capitalised Revenue Expendidanc Non-Enhantaury Assets	3099900	90-9085	2006-07	2007.08	2008-09	300910	11/0185	2015-12	2013-13	2013-14	2018-15	2015/16
Committee Norwhiff sustractions Assets (contributed after 31 03 846)		978	92	57	67	2	3	23	3	23	2	2
Depreciation of new captablest Assets		07421	-69	4.3	449	-8.3	488	Ne	199	100	44.6	42
Capital Additions	27.0	8.0	5.3	4.9	200	:	6.2	120	8.4	92	22	2
Closing Capitalised Non-Introduction Assets	27.0	878	43	473	22	3	6.2	5.1	5.4	8.6	22	53
		I	I	I		I	ı				ı	ı
Summary of Depreciation Calculations for Capitalised Revenue Expenditure: NI	2099902	90-9085	2086-07	2807-08	2008-89	2009-10	2810-11	2011-12	2012-13	2013-14	2014-15	2015-16
Non-HWastrick, as Depreciation of capitalised Assets capitalised before 31/33041	-878	070	99	0.0	0.0	9	6.0	000	0.0	979	9.9	99
Mon-trifragmobiles: Depreciation of capitalised Assets capitalised other 31/03/04.	99	-87.0	-8.9	6.4	4.9	-6.3	-5.8	89	-8:1	-5.4	-5.8	7
Total Desirectation	-918	-87.0	-173	97	97	-83	-5.0	200	139	+3+	-8.8	Ť

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Tax Calculations

	200508	2004-05 2005-06 2005-07 2007-08 2008-09 2008-10 2018-11 2018-12 2018-13 2018-14 2018	2006-00	2007.08	2008-09	00.4800	3018-11	20115-122	2012-13	2013-14	2016.15	2015-16
Copporate Tax Paris	3000	3000	2002	30%	308	SAR	NIK	MAR	MARK	SPIS	SW	300
Padna profitiess calculation (before leases brought ferend!"												
	2008-05	2005-06	2808-00	2007/08	5008-08	00-6000	2018-11	2015-12	2013-13	2013-14	301918	2015-16
Helpiric Cost Operating Profit	2002	234.5	237.0	6000	2002	1775	2014	2000	1300	200.5	9789	408.7
As HC Depreciation	117.5	11075	102.6	111.6	0.000	147.0	0.230	1043	156.4	97802	2340	522
SUS INTERNUTATE REvewalls Change	149.0	149.0	999	216	94.0	90'0	200.7	100.7	108.8	108.9	1355	113.5
tion amortisation of PFI	1.0	1.8	17.6	878	1.8	1.8	1.8	1.8	1.8	1.8	178	1.8
minus amprilopion of grants	2.5	5.5	2.5	5.5	5.6	0.1	0.1	0.1	0.1	0.1	5	170
minus Capital expenditure allowable as a deduction from profits	9.0	0.0	0.0	0.0	000	90	000	00	00	00	0.0	00
minus finance listae depreciation	979	6.0	0.0	0.0	00	90	0.0	00	99	0.0	22	00
minus Depreciation Allowed as a deduction for tax purposes	154.0	172.0	11.2	8.3	11.5	0.00	19.3	2174	246.1	27.5	31.5	34.9
n in an and interved payable	1410	145.0	140.0	153.0	2.001	178.5	677.9	1817	166.3	100.9	67085	200.5
sical reserves expenditure not allowable	200	2.00	2.00	200	0.00	2.80	5.00	2.00	2.00	1.00	2.00	0.00
ska Change in General provision	08.16	000	90'0	000	80.0	0.00	00.0	09.0	0.00	00.0	000	09.0
minus Capital Allowances (25%, 0% pools and 180% first year)	29.4.1	282.4	2003	037.0	9.000	7,900	8.000	67000	344.5	055.7	202.4	6 800
n hua hdushisi Baldings Allowanos	183	193	813	223	18.7	500	20.5	123	950	977.0	405	430
minus Profit income not taxed as hading income	0.0	=	00	8	00	2	9	9	93	90	=	8
that exceptional income less exceptional expense	989	-3.5	00	60	00	93	000	03	00	000	=	8
As Drants and Contributions tenable on receipt	9.0	9	0.0	910	000	93	000	00	00	900	=	8
Sandan assellations for the						-						

Variance Cell E19 is Gort 1. However, for the former there is a further adjustment in line 40 which will maint both calculators. This has been done to avaid the use of circular *The initial trading profit might

Losses												
	2099702	2005-06	2005-07	2007-06	3308-03	2089-10	2018-11	2011-12	2012-13	2013-14	2014-15	2015-16
Losses brough favead	143.0	149.0	187.4	8.69	0.0	9.9	0.0	0.0	979	970	4.0	970
Losses used in the period	9.0	3	117.0	6.60	000	9.0	00	00	979	90	2	900
Addition	6.0	000	0.0	979	000	9.9	000	00	00	900	2	90
Loanea can'ied forward	149.0	1824	0.00	4.0	000	9.0	000	00	000	90	9	000
Corporation has entackeline if trading people												
	2004-06	3000000	2006-07	2007.08	2008-09	00.4800	2018-11	2015-12	2012-13	2013-14	2016.15	2015-16
Ad retired handless mad it	ŀ	ŀ	2		ŀ			ŀ		0	Ė	9
Square mongaper	25	=	88	22	ž	19	18.8	7 (2)	2 E	32	e e	35
Adjustments due to discularity lettern Revenue Variance Cell 210 ± 0)												
	3099-00	30005-06	2006-07	2007-08	2008-08	2089-10	2018-11	2011-12	2012-13	3013-14	2016-15	2015-16
Aguating that in Tay due to constantly			00	100	88	93	8	8	93	93	2	93
Corporation for politi	2	3	0.0	18.5	387	34.8	18.8	23.4	34.0	28.0	38.0	377
	209908	2005-00	2005-07	2907-06	2008-69	2089-10	2018-11	2011-12	2012-13	8013-14	201415	2015-16
Total capital allowances utilised	209.55	311.78	311.78	200.09	388.36	361.98	360.07	389.94	379.50	38538	413.54	433.99
plus Expenditure allowed as a treating profit deduction	900	0.00	900	0000	0.00	0.80	0.00	0.00	0.00	6.80	0.00	0.00
plus france lesse dependation	900	0.00	90'0	000	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00
minus 900	945.00	145.00	08.50	90.34	20.00	86.38	99.75	100.00	185.77	188.94	112.21	115.50
minus Historic Cost dependation	912.42	113.17	100.84	111.00	108.00	147.08	162.00	12831	186.42	280.56	213.00	205.500
minus amortisation of PT	150	151	120	150	150	157	157	1.57	1.57	1.57	1.57	1.57
dva amorbadom of grants	252	97	2.46	546	549	0.00	0.08	90.0	90.0	000	900	0.00
minus severas espendizes not allowed for tax (and allong permanently dissibleed expendit	Ш	200	902	500	5.00	2.00	5.00	92	200	200	200	2.00
minus Drants and contributions tanable on necessit	900	000	900	900	000	0.00	000	00.0	000	000	88	000
pha depreciation alleverd on a deduction	554.78	172.00	11.22	929	12.00	16.04	19.28	21.28	24.13	27.45	31.80	35.04
Change in accelerated copital altracerors	120,73	224.44	108.89	128.63	123.79	123,42	117.34	119,73	107.94	189.70	118.00	123.23
Change in deferred for fame												
	2099902	2005-00	2806-07	2007-06	3008-09	2089-10	2016-11	2011-42	2012-13	8013-14	2014102	2015-16
Change in accelerated capital altinuarios	130.8	254.4	130.7	125.6	108.8	123.4	117.8	114.7	1003	108.7	1361	128.3
minus change is general provision	81.8		0.0	0.0	000	90	000	00	00	00	6.0	00
minus movement in losses canned fanetral	4.0	383	-117.0	-69.8	000	90	000	00	0.0	0.0	23	00
Delenad tax terms	6.20	186.1	0.090	185.4	103.6	122.4	917.3	1987	100.9	108.7	11871	103.2

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Tax Calculations

Debresd has sharing												
	309108	3065-00	2006-07	2007-08	5908-69	00-6806	2018-11	2011-12	2012-13	2013-14	2014-15	2015-16
Deferred tax items multiplied by cooperate tax rate	24.86	68.89	24.49	58.40	27.14	307.00	85.38	20,00	30.38	15.56	38.50	36.97
Deterned Tax + Corporation Year												
	2005.08	3039.00	2006-07	2807.08	2308-08	2089.10	3018-11	2011-12	2012-13 2013-14		201018	2019-16
Deferred Tax + Corporation Tax	29.86	68.89	24.40	24.81	63.08	8138	80.04	59.62	96.98	29795	68.50	4000
Tax Beconciliation												
	307000	300000	2806-07	2007.08	3008-08	3089-10	3015-11	2015-12	2013-13	2013-14	2016.16	2015-16
Profitoelosiax	1.00	198.0	0000	297.0	213.2	1726	1003	162.1	169.5	1884	2017	211.0
Especial in chaps & XVs	792	200	74.5	76.5	640	21.0	52.0	24.0	27.0	28.7	909	63.0
Tax chaps boards per accounts											ı	
Cerporation Tax	9.0	000	900	-15.49	20'00	-14.75	15.84	-21.40	20.00	200	25.00	1000
Ceremol You	-24.00	-68.89	74,48	-50.00	97,14	-07/83	38.20	22.22	00.00	16.50	34.50	20,00
Total Tax	-00.00	-68.85	-24,489	-54,11	60,09	-61.76	-95.04	94.62	08.80	48.67	-60.50	200
Overstage (underhalps)	180	374	90'0	000	90'0	0.00	000	0.80	0.00	001	900	0.80
This overtunder) charge is explained as:						Ī	Ī				Ť	T
Permanent offerences (\$7.28%)	-4.80	97.9	900	000	0.00	0.00	0.00	0.00	0.00	0.00	0000	0.00
Unaughtined terms	0000	0000	90'0	0000	00.0	0.80	0.00	0.80	0.00	0.00	0000	0.00
Total Difference	100	275	90'0	000	00.0	0.00	0.00	0.80	0.00	007	000	0.00
Check Line (Desiglained lans + 0)	TNUE	TMUE	THUE	THUE	TRUE	E S						

	3099-002	2005-00	20000-00	2007-06	2008-08	20089-10	2016-11	20-15-02	2013-13	2013-14	2006-15	2015-16
WICS Revenue without au abbasince from the required evenue			9.9	979	ĝij	99	gg	grg	99	gų	9	gg
			2021	207.58	9000	280.9	208.1	8.000	216.0	316.3	2,000	28.0
minus PSI charge			120.4	126.0	5,650	135.0	97800	141.3	144.2	147.0	1800	153.0
minu PD			9780	6	54.0	80.0	68.7	108.7	106.8	108.9	140.0	115.6
minus Historic Cost Depositistion			97594	411.0	0.000	147.0	0.000	1743	108.4	9000	2540	2000
minus Historic Amontantion of PF1			977	97	1.6	1.6	1.6	1.6	1.6	1.6	4.6	1.6
dua Arrofission of prants			570	57	900	60	67	570	674	634	5	50
Halanio Cost Operating Profit rethout tax allowance on Required Revenue			-384.5	-604.6	4006.5	-675.1	-700.6	-1780.6	-0252	-0243	-600.2	4004.6
Adjustments due to Circularity between Revenue Regulnement and Tax (This table o	le cely works when Revenue Variance O	on Revenue V	1	00 = 063								
	2004-06	30001-06	2806-07	2007-06	2008-08	2089-10	2010-11	2011-12	2012-13	8013-16	2004-15	2015-16
To before leading	L		90'0	000	00'0	0.80	000	08.0	000	000	000	0.00
Additional Tax and interest adjustment to infinity (8,a) to circular fluid			90'0	000	00'0	0.80	000	0.00	0.00	0.00	000	0.00
				10.0	-	-	-				1	

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Process Sheet: Revenue Calculation

	2000000	2001-00	200000	2000-00	2018-11	2011012	2012113	2013-14	2010-19	201018
					ľ					
Revenue Requirement	6.050.9	816.2	804.5	1,018.2	1,00%	1,052.8	1,098.6	1,548.8	1,308.4	1,354.5
Cent of Daplas	185.5	1983	242.0	2007.7	208.4	248.8	201.6	276.6	200.0	308.4
Physical and Presents Drage	90.6	01.55	Ĩ	98.9	283	100.7	100.6	6.804	1122	9511
			Ī							
WEAV Depreciation (net of Americanion of grants)	1870	2112	2882	000	2007	236.9	192	277.0	0000	1004
MDV eliminated by disposal of non-tritu assets	10	9	2	2	7	9	7	-	9	9
Openiting Costs	202	9775	283.9	2007	2001	300.0	3100	316.2	322.5	329.0
PFIChese	122.4	124.8	129.5	138.8	138.8	141.3	144.2	0.000	0.000	153.0
Working Capital Adjustment	12.00	12.40	(2.7)	(2.9)	0.0	(2.3)	(2.8)	(2.8)	0.11	(3.2)
			Ī							
Caphilipa from disposal of assets	1700	11.00	0.0	000	0.00	0.40	0.00	0.8	(1.5)	0.0
Tacation persible in the veer		15.5	18.0	14.0	77	20.4	28.6	988	986	200.4

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Output Sheet: Investment Summary

Planaed Insestanent Programme (t Million) (outsan pripe)	2004-05	2005-06	2808-07	2007-00	208-05 2005-05 2005-07 2007-05 2005-05 2005-10 2017-11 2017-12 2017-13 2015-15 2015-15	3009-10	2010-11	2011-12	2012-13	2013-14	2010-15	2015-16
Capital Espendikus components:												
Total G&S III Programme:												
Infrastructure Remerals (Pre-efficiency)		9	Ш	910	PAG	28	280.7	1007	408.8	400.9		
Other Investment (Pro-efficiency)		9	ľ	ľ	Γ	1,000	408.8	461.2	9.00	507.0		
Average IPE Efficiency tapes CN		900	0.000		200		900	900	900	0.00		
Average Of Etropica triant (No.		900		0.0%	NII.		900	900	900	0.075		
Printshapton Rememb (Post efficiency)		0		915	94.0		28.7	100.7	9.00	0.000	1122	115.6
Other Investment (Post-efficiency)		0.0	1201	488.0	538.5	1,200	409.8	401.2	909.9	587.0	804.8	622.7
Trial CAS III Proparate		0.0	T.085	5695	632.8	688.9	509.5	Ш	415.6	Ш		738.3
Task RW & Other Capital Eupendhure												
Capital Expenditure (Pre-efficiency)			ш		П							
Average Efficiency Target (Tio)		74070	0.0%	0.0%	100	500	0.0%	0.0%	0.0%	0.0%		
Total RW Capital Expenditure (Post-efficiency)					Ш	976						
Tatal G&S II and additional outputs (2004-05 and beyond)												
Infrastructure Removable	144.8	98	99									
Other investment	271.4	538.6	1707	500								
Total GBS 1 and additional outputs (2004-05 and beyond)	500.0	622.5	100	606	٠							
Total Capital Chamb and Combit done	2	2	•	٠				•		·		
TOTAL CAPITAL EXPENSIVE	515.2	638.0	5943	985.0	688.5	688.5	500.5	201.9	615.6	629	716.6	788.5
Check line (HC Asset additions including grants)		Clebk	Cheek	Check	Check	Cleck		Clebk	Check	Creox	Cleek	Check
Check the (Cash Plon -> Prestments)		Check	Osek	Creck	Check	Check	Cheek	Check	Check	Creck	Cheek	Check

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Historic Cost Balance Sheet

E Million	Aud Not Actuals 2803-04	3064-05	900000	2009-07	2807.08	2009-00	2009-10	110100	2013-12	2813-13	21012	2014-19	2019-18
Fland Assets:													
											Ц		
Tangible Assets	2,681.2	0,000,0	1,008.4	3,950.6	3,939.5	4,540.0	4,790.0	5,040.0	8,316.0	Ц		6,413.4	6,609.6
Investments	0.1	0.1	100	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100	0.1
Total Rood Assets	00000	2,002.7	1308.5	1,920.6	1,939.6	4,040.9	4,793.3	5,040.1	2316.0	Ш	Ш	6.413.5	6,689.7
			Ī		Ī		I						
Convert Assets:			Ī		Ī								
Stocks	4.5		2.8	4.1	42	4.3	4.4	4.5				4.8	
Track China	50.7		123	124	187	75.4	75.7	75.4				203	
Physiquinos and Accord toping	84.0		61.0	1000	94.0	9973	99.9	980				60.0	
ASI assets transferred to service cardination	34.0	37.2	28.7	58	200	30.9	22.4	27.0	28.0	24.7	20.1	21.5	0.01
Other Debisor	23.4		20.0	583	24.6	102	18.0	200		l		583	
Total Debora	200.0	1	0.004	160.7	194.0	190.0	165.6	185.6				201.7	
Carb	10.6		2	80	08	50	50	50	Ш	Ц		2	500
Total Connert Assets	200.9	1981	9.001	1007	0164	183.1	186.5	1921			204.0	206.6	24373
			Ī		Ī								
Man-Soverment Loans temporal felling due withis one pead	12.7	10.7	6.2	99	99	239	1.4	1.6	1.5	90	90		
Frace and Capital Chedions	100.8	131.9	9.091	138.8	161.8	1837	138.6	130.4	341.8	B	1	180.6	189.0
Acoruste, Payments received in advance, taxes and excisi security	114.0	115.0	9700	110.6	119.7	1958	130.3	122.5	596.7	5003		100.3	138.0
Other Children	31/0	30.9	98	918	9	23.1	34.4	35.0	38.6	Ц		30.8	38.6
Switters (Miling due within one year)	2007	2007	1,000	7007	206.7	263.9	005.6	2882	9000	300.0	200	202	200.5
Company of the Compan	200	1000		1	20.00	10 000 00	0.000	17 0.00	1		10.00		1000
DATE CARDOTT PROPERTY DATE OF THE PARTY OF T	2000	1000	1	200	100	00000	200	211	100		CHIC		0.000
The state of the s			1 1000			1000	******			-	******		0.000.0
	400400	0.000		4.400.0	-	4,0000	200000	20000	the same	Ш	Ш	Western .	COMMON
										Ш	Ш		
CORP. CHESTOCK (A PEACH IN 1974) AND THE PROPERTY OF BOOK (A)										1	ı		
Performance committee and the committee of the committee	5.07	200	787	2000	2000	9000	2.00	0.00	7 8 9	1	7007	97.00	200
Sections to belifies and chances	0.70	0.00	200	0.00	0.00	0.00	200	100	900	1	ı		100
California (more described)	124	100		1		100	9.0	90		L	ı	L	0
NET ASSETS	23875	2,538.8	2.898.5	1,603	3.400.0	3,586.2	4,760.6	4,521.6	4.748.2	100	г	5.734.4	6.093.6
										Ш	ш		
Capital and Reserves					Ī								
Constituted Loans	2,138.5	2,248.6	2,422.8	-	2,706.2	2,694.3	3,387.9	3,347.5	3,456.6	L	3,807.5	4,001.9	4,223.3
Other Reserves	133.4	П	100.4		133.4	133.4	133.4	133.4					
Post tay profit	60.6		1987		172.9	149.2	120.8	121.4					
Visit retained earnings bought forward	24.9	929	7	300.5	478.5	2000	7865	Descri	1,646.7	1,980.2	13010	1,407.9	1578.1
TOTAL	2,387.5		2,008.0		3,490.9	3,080,2	4,250.6	4,521.0					
	and the	100	THE REAL PROPERTY.	THE REAL PROPERTY.	TO NO.	-	TOTAL BE	TO LOS		and a	10000	ALC: N	TIME

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Historic Cost Income and Expenditure

Z III 5215	200304	209902	2005-09	2009-07	500765	2308-69	1908-11	11002	201102	2012113	80000	201919	201918
Denot	22.3	227.3	1280	2290	1,005.5	1,006.2	1,016.2	1,052.2	1,087.5	1,124.0	1,992.7	1,002.5	1,244.2
Historic Asset Deceptables	118.0	112.6	133.2	182.6	111.8	2000	347.3	162.0	1343	186.4		214.0	228.6
Enhantment Percents Charge	143.0	145.0	145.0	88.6	5116	070	999	100.7	1827	105.6	108.9	112.2	115.6
Tross Depondution and Inhabitudiane Changes	363.0	280.6	288.2	186.2	200.1	203.0	244.0	2007	277.0	280.2		308.2	341.1
Amonitation of Grants	1.6	2.5		2.5	2.6	5.5	6.1	6.5	0.1	0.1			0.1
Amortisation of PFI Assets	1.6	2.4		108	5.6	1.8	1.8	5.6	1.8	1.8	1.6		1.9
Revenue less Depreciation and Americation	696.7	0.000.7		792.3	4.000	760.1	775.7	788.0	0.690	600.3			96178
Operating Costs	308.3	233.4	2997	272.1	217.6	8.000	200.8	2883	383.9	310.0	316.2	322.5	329.0
				Ш	П								
PM Charge	111.5	111.0	157.0	122.4	194.8	128.5	198.8	138.6	141.3	2860	0.0%	158.9	153.0
Operating Profit	274.9	22933	334.5	287.0	400.9	313.7	343.1	287.4	363.3	376.1	338.5	400.6	475.7
Interest Charges	108.6	148.0	145.0	148.6	153.9	5.991	176.5	100.0	1887	1863	190.9	87007	288.5
Exceptional Expenses Chromel	8.00	5.55	2.5										
Asset disposals	124	6.2	10.5										
Pre-Tax Profit	6.00	1788	186.6	248.3	247.0	212.2	172.6	172.5	1821	1997	3,962	2007	271.1
Durant Tax		,			15.5	0.85	14.0	16.0	11.4	34.0		28.0	36.4
Delense Tax	100	883	95.0	246	58.6	503	0.00	383	33.5	20.4	6.00	243	028
Total Tax	200	683	92.6	24.5	34.1	04.0	919	620	546	87.0		68.5	60.0
Dividend Payment											-		
Posit last prefit	9.00	510	142.7	132.0	172.9	248.2	87853	121.4	127.6	130.9	6,000	144.2	147.0

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Cash Flow

E William	80468	90500	105507	507705	009000	014602	11000	201102	2012/12	2015.14	8014108	805016
Operating Cash Flores		П						П				
Operating Profit	2003	234.5	0.000	408.9	200	040.1	83.4	907.9	1001	380.5	405.6	419.7
100												
Part Part and Selection and Selection of Selection	3 000					ľ		2000	0.000	П	2 804	2
describation of PFI Assets.	110	18	1.8	91	14	1.6	1.8		14	1.6	180	5
Amortisation of Grants	CC.RI	(2.8)					68.00	98.10				(0.1)
Change in Stock	70	20			l	l	9.00					(0.1)
Change in Debtors (excluding PF) assets transferred	12.6	dy or					0.40			999	08.80	存置
Change in Chediens	988	183					043.30					8.9
Change in Provisions (seclading deterned tax)	15.6	(18.8)					0000					HOB
Exceptional terms	522	92.0			Ш	Ш						
Net Clash Flow From Operations	200	200	24.3	613.4	8013	1000	200.1	9463	678.0	713.7	200.0	180.9
Investment Fands Row												
	Ī											
Prinsbuches Personals Expenditus	141.8	98.0			076	98.8	58.7	102.7	106.8	198.0	1122	115.6
Other Net Appel Additions	372.5	558.1		501.8	509.4	5000.7	409.9	481.2	5000.0	987.0	8708	555.7
Dispris	02.01	(2.8)										
Model Disposale	2.6	13.6			1.0	17.0	1.0	1.0	1.0	1.0	1.0	1.0
Changes in investments												
Not investment Cash Flow	8857	618.0			606.3	668.5	558.5	625.9	63458	6969	715.8	1272
Not Clash Flow From Operations less Investment	40.6	0.850	88.0	28.4	00.00	98.0	58.6	90.6	56.4	100	123	93.6
Prancing Cash Pow												
Downward Loans Resaid	100	282	4.04		1	100	N N	20.0	4.04	7.75	200	29.5
Non-Development Louis Randel	127	187	4.2	L	9.0	2.8	7	14	11	00	90	
Principli Publi	0.140	145.0	148.6	153.9	168.5	133.5	127.0	163.7	188.3	192.0	6002	288.5
Teoritor Ped	-	-			28.9	14.8	16.8	23.4	24.5	992	192	255.4
Dividends Paid	-											
New Delit Apparted (not Your pash stock)	390.8	238.4	1164.1	218.0	208.3	3007.0	208.1	164.6	188.5	2565.2	280.0	290.9
of which not refinancing	98.4	165.5	104.6	146.0	200	200.6	138.3	108.5	146.4	1897	212.0	94.0

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Current Cost Balance Sheet

I William	90-9082	2008-07	2047-06	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Fixed Assets:											
Targible Assets	24,380.6	25,379.9	20,420.9	27,534.3	28,808.5	20,466.3	20,790.0	31,086.4	20,254.1	34,534.4	35,956.4
Third Punit Contributions											
Production of the Contraction of	0.1	0.1	П	4.5	0.1	4.5	9.0	0.1	9.5	0.1	1.0
Montring Capital	(140.1)	(1887)	1132.6	(142.9)	(304.2)	(1148.5)	(125.1)	1130.73	(157.0)	(199.0)	(168.7)
		-									
Net Operating Assets	29,250.5	22,082,2	20,120,3	27,300.4	1972	20,571.3	20,000.0	31,007.7	23,017.1	20,000	25,700.8
Costs and investments	02	50	Ш	2.0	92		Ш		52	50	12
PRI assem transferred to service portracture	285	35.1	34.6	33.8	1001	200	21.3	30.3	282	287	28.8
Non-Track Debrors.	282	26.1		28.1	265				287	28.1	1.00
Non-trade Cheditors due within one year	100	30.1		28.0	288				200	828	988
Chadhan dua after mans fran one year	280	101		22	23				1.0	1.0	1.4
Provisions for Labilities and charges	600	025		45.3	46.3				700	18.0	14.8
Delenned Tax	120.4	6.000		2598.6	236.6		Ì		40874	594.9	5945
			П								
Net Assets employed	0,000,0	25,000.3	25,096.3	27,064.2	28,577.1	29,161.9	30,248.8	31,384.2	32,004.6	03/00/13	35,166.5
	I			Ī	I		I	Ī	Ī	I	
Captal and Reserves											
Covernment Loans	8,422.8			2,904.3	1307.9	3,347.5		3,686.7	3,907.5		4,238.3
Other Reserves	120.4	ı		130.4	100.4	135.4		123.4	130.4	ı	130.4
Current Cost Reserve	21,190.3	21,986.1	22,681.9	23,4467.8	0.000.00	25,138.2	36,080.3	36.954.7	27,000.0	20,009.5	29,990.6
Post tax profit	160.7	П		50.9	286.1	13.0		22.9	28.2	П	587
Not notational earnings throught streams	150.0	П		4023	508.7	2552	ш		708.4	П	046.5
TOTAL.	0.000,00	П		27,061.2	28,177.1	20,161.9	20,248.8		22,404.6	20,001.3	25,166.5
Deck	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	THUE	TRUE	TRUE

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Accounting Outputs: Current Cost Income and Expenditure

2000 M X	Mon-dr.	2001-00	2000-09	2008-11	201011	2011112	ST-STEE	2012-11	2010-19	2010
Myesse	7,000,7	1,008.5	1,009.2	1,016.2	1,082,2	1,087.5	1,1294.0	1,162.7	1,000.8	1,244.2
Current Coot Depreciation	1872	2117	238.7	2552.2	208.7	53939	0.968		300.0	20074
Infrostrutture Receivable Charge	88.0	513	94.0	195	280	100.7	100.6		112.3	115.6
Total Depreciation and Infrastructure Chapter	508.7	2002.4	2004.7	348.1	208.4	200.0	2017	306.0	412.3	0.194
Americanical Greats	٠		٠		٠	٠			٠	٠
Anadiation of PFI Assets	1.6	27	2	77	1.0	9	o P		e d	ō
Revenue Issa Depreciation and Americanies	785.5	784.5	662.8	47.00	671.1	746.0	2003	274.8	788.5	2 160
CO Operating Costs (accluding Dep and Amortsation)	2021	277.6	2003.9	2007	200.1	989.9	310.0	316.2	302.5	389.0
PROMISE	1224	1383	128.5	1383	138.6	1413	1982	147.0	190.0	183.0
Working Dapital Adjustments	5.0	5.4	22	111	9.9	8.0	55	22	2.5	900
Carnel Cost Operating Frofit	213.6	2007	272.1	310.6	238.4	323.1	336.6	314.3	319.2	3224
then Chapes	1440	150.9	1013	170.5	1773	1.181.7	1007	8	5,007	2882
Scoppional Expenses Income	٠									٠
Asset discouls	10.00	60.03	97.0	0.00	270	0.20	1200		0.30	10.00
Plancing Adjustments	3.1	4.4	5.5	53	6.5			23	6.9	92
Career Cost Posts Before Teaution	187.2	1823	1363	37.	88.0	1283	128.8	1087	138.8	123.0
Sprand Ten		12.5	28.4	14.8	10.0	21.4				2004
Defend Tie	24.5	28.6	27.1	27.0	39.2	232	707	20.9	34.5	37.0
Total Tax	24.5	78.1	64.0	91.6	95.0	94.6				533
Divided Payment										
Post tax profit	122	200	2	200	13.0	73.7	22.0	787	583	98.7

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Main Outputs: Model Output

145.3 140.4 1709 5.00, 5

	3000-00	2008-07	2007-38	5009-00	2008-10	2010111	2011-12	2012-13	2010-14	2016-15	2016-16
Alternative Revenue Phasing (Cm)	1.000	C000	ľ	-	ľ	ľ	ľ	ľ	ľ	ľ	ľ
Year on Year Revenue Change		1,975		0.4%	0.9%	3.2%					3.4%
Carlance From Model Calculation (Circ)		(1080)	(083)				08.7	(34.4)	(43.9)	0.00	
Model Reverse Attentative Phasing	-										

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Model Outputs: Key Performance Indicators (PR04 and PR99)

t of Reitor			
ere.	Definition	-COST (BANK)	10 target
Clearly Internet cover	hads harr sceniforic area	Aecured	
display cash interest cover	Tundo from operations less capital	Around	
ndo hom operations debt	Familia from operations stold	Overthe those	100
stained cost/flow-tests	Retained capititioecologic	Greater than	£
daing	net debtingulationy capital value	Leet fran	3

(7)	2004-15 2005-16 2005-17 2007-08 2008-09 2005-18 2016-11 2016-1	20.5.05	23.66.07	2007-000	5008-00	11.000	2018-11	2011
Cash internet coest	3.89	60.6	303	3.08	3.53	3.45	3.00	-
Compliant with Orvest acceptable stripe			394		300	Jane .	hat	Na.
Adjusted cash Internst cover	500	238	245	253	130.0	2002	181	
Compliant with Orient acceptable range							9488	NA.
Funds from operations debt	TORS	18.27%	5000	15.30VS	N.30% N.08% D	13.00%	3.80% 11.05%	120
Compliant with Chrest acceptable range			100	100	200	100	2	
Peterined caphiltonrolets	50007.E	90200	10,007%	16,30%	51. P16011 P10011 P10011 P10011 P10011 P10011 P10011 P10011	13,90%	11,00%	757
Compliant with Others acceptable range			100	1400	polici	504	(A)	184
Overing		89,080%	46,06%	64.69%	85,6914 85,9914 84,8514 63,9914 63,7914 63,6315.	60,79%	100,60%	617
Compliant with Orwat acceptable range	'		90	994	pote	906 906	948	Val.

Key Performance Indicators (selected ratios from PR99)

Unit of Ballon			
Name	Definition	OFwar 2008-65 tax	3et
Debt Payback Period (IEE/TDA basis)	Debt / Net operating cash flow from operating activities	Maximum (Years)	w
Debt Payback Period (SBDA basis)	Dabt / Net operating cash flow from operating activities less tax		
	less interest expense	Maximum (Years)	r
Clash Flow to Capital Expenditure Rado (GRIDA basid)	Net operating cash flow fram operating activities less tax less		
	Interest experse / Capital	Minimum Partentage	40%

698	9001-00	2005-06	2009-07	2007-09	2008-08	3008-18 2018-11 2011-12	2018-11	2011-12	1
Debt Psytest Period (28/704 besit)	4.10	633	4.58	444	4.00	500	200	979	
Compliant with Chresi acceptable range			300	300	200	200			
Debt Pryback Period (2050A basis)	8.60	5.47	6.30	6.14	7.011	1.00	200	7.81	ш
Compliant with Chast acceptable single			res	300	9				
Coath Flow to Capital Expenditure Ratio (ERGA besis)	9448	7595	2000	26%	1999	8130	334	5608	ш
Compliant with Others acceptable ongo			166	594	504	994	906	20.0	в

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Water Industry Commissioner for Scotland Financial Model - Strategic Review of Charges 2006-10 Alternative Inputs: Revenue Variance Options

	2000-06	2006-07	2007-08 2009-09 2009-10 2010-11	2009-00	2009-10	2010-11	2011-12	3011-12 2010-13 2013-14	2013-14	100
Membro Reverue Plasing (Ert)	1736	1,200	1,006.5	1,000.0	1,000.2	1,000.0	1,007.5	1,184.0	1,988.7	7
Variance Fram Madel Calculation (Em)	٠	128.7	00.3	580	٠	0000	100	24.4	13.9	
Level of debt (Dr.)	2,422.6	2,553.6	2,706.2	2304.3	3,207.9	33473	3,458.6	3,686.7	3.807.5	۴
Destructive Debt to MCV	78%	808	500	Ser.	Sept	242	529	ш	903	
Model Teverue Alemative Phasing	-									L

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Appendix 13

Tariff basket model and tariff multipliers

Water: household unmeasured

Water: non-household unmeasured

Water: household measured

Water: non-household measured

Waste water: household unmeasured

Waste water: non-household unmeasured

Waste water: household measured

Waste water: non-household measured

Surface water drainage: household measured

Surface water drainage: non-household (measured and unmeasured)

Trade effluent: standard and non-standard Mogden-based charges

Trade effluent: capped and non-Mogden-based charges

Revenues

Charge limits

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Water: Household Unmeasured

old Properties - billed unmeasured	SIIIS	5004-02	2003-00	0000		2000-03		11-0107		2012-13	
of Band "A*" properties, paying full charge	'n	226	604	416	461	202	552	298	643	689	734
nd "A*" properties, with 25% discount	E	413	457	827	919	1,011	1,103	1,195	1,287	1,379	1,471
id "A*" properties, with 50% discount	ııı	4	5	1	2	2	2	2	3	3	3
of Band "A" properties, paying full charge	'n	199,916		147,263	143,420	139,576	135,733	131,889	128,046	124,202	120,358
id "A" properties, with 25% discount	ııı	306,852	307,938	365,173	365,194	365,215	365,236	365,257	365,278	365,299	365,319
d "A" properties, with 50% discount	JU	16,720	17,296	4,213	4,231	4,249	4,267	4,285	4,303	4,321	4,340
of Band "B" properties, paying full charge	JU	282,608	278,707	225,684	223,204	220,723	218,243	215,763	213,283	210,802	208,322
d "B" properties, with 25% discount	'n	252,106	255,723	317,260	320,030	322,801	325,572	328,343	331,113	333,884	336,655
d "B" properties, with 50% discount	'n	10,276	10,737	2,661	2,712	2,763	2,815	2,866	2,917	2,968	3,019
of Band "C" properties, paying full charge	'n	202,206	201,739	178,076	178,019	177,962	177,906	177,849	177,792	177,735	177,678
nd "C" properties, with 25% discount	E	133,114	135,770	167,647	170,376	173,106	175,835	178,565	181,294	184,024	186,753
d "C" properties, with 50% discount	nr	7,465	7,674	1,923	1,955	1,986	2,018	2,049	2,081	2,112	2,144
of Band "D" properties, paying full charge	ııı	177,288	177,852	172,227	173,462	174,696	175,931	177,166	178,401	179,635	180,870
d "D" properties, with 25% discount	ııı	82,084	84,198	98,318	100,629	102,941	105,252	107,563	109,874	112,186	114,497
d "D" properties, with 50% discount	JU	862'9	8/9/9	1,711	1,774	1,836	1,898	1,961	2,023	2,085	2,147
of Band "E" properties, paying full charge	JU	202,580	204,520	204,874	207,658	210,442	213,226	216,011	218,795	221,579	224,363
d "E" properties, with 25% discount	ııı	62,796	64,589	73,731	75,915	28,099	80,284	82,468	84,652	86,837	89,021
nd "E" properties, with 50% discount	'n	5,730	800'9	1,564	1,637	1,710	1,783	1,857	1,930	2,003	2,076
of Band "F" properties, paying full charge	ıu	111,896	1	117,987	121,284	124,582	127,879	131,177	134,474	137,772	141,069
d "F" properties, with 25% discount	JU	25,476	26,394	29,502	30,551	31,600	32,649	33,698	34,747	35,796	36,845
d "F" properties, with 50% discount	nr	3,071	3,286	877	938	666	1,060	1,121	1,182	1,243	1,304
of Band "G" properties, paying full charge	JU.	75,546	76,848	79,618	81,444	83,271	85,097	86,924	88,750	90,576	92,403
nd "G" properties, with 25% discount	ııı	13,152	13,664	14,838	15,353	15,869	16,385	16,900	17,416	17,931	18,447
id "G" properties, with 50% discount	ııı	2,064	2,190	529	614	649	684	719	754	2007	825
of Band "H" properties, paying full charge	JU	7,701	7,837	8,214	8,357	8,500	8,643	8,787	8,930	9,073	9,216
nd "H" properties, with 25% discount	ııı	920	1,006	1,071	1,109	1,147	1,184	1,222	1,260	1,298	1,335
d "H" properties, with 50% discount	ııı	385	406	106	111	117	122	128	133	138	144
mber of billed properties	ııı	2,189,396	2,201,360	2,216,361	2,231,359	2,246,359	2,261,359	2,276,363	2,291,361	2,306,360	2,321,358
of Band "D" equivalent properties	ııı	1,838,904	1,851,306	1,853,938	1,871,402	1,888,870	1,906,336	1,923,808	1,941,273	1,958,739	1,976,204
	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Charge	£/brop	158.76	163.26	166.53	169.86	169.86	169.86	174.10	178.45	182.92	187.67
	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
enue	3	291,944,377	302,244,283	308,727,433	317,868,318	320,835,377	323,802,010	334,939,011	346,429,127	358,284,657	370,877,793
age increase in total revenue	%		3.53%	2.15%	2.96%	0.93%	0.92%	3.44%	3.43%	3.45%	3.51%
	 					•					
revenues	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
/ear	3			300,219,444	308,289,168	314,901,982	317,868,318	320,835,377	331,897,061	343,312,486	355,089,856
Z COVI											

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

			Water:	Water: Non-household Unmeasured	Unmeasured						
ehold Properties - billed on unmeasured basis	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
paying standard charges	JU	48,650	48,210	48,210	48,210	48,210	48,210	15,473	15,473	15,473	15,473
receiving relief from charges	۲	5,622									
	nr	54,272	48,210	48,210	48,210	48,210	48,210	15,473	15,473	15,473	15,473
(altra Bass		2004 05	90 3000	20 3000	000 2000	00 0000	0000	10000	004440	0040040	44
Value base	OUITS	2004-05	2003-06	70-900Z	2007-08	2008-09	2003-10	11-0102	2011-12	2012-13	2013-14
for properties paying standard charges	m3	430.0	425.3	425.3	425.3	425.3	425.3	136.5	136.5	136.5	136.5
properties receiving relief from charges	m3	42.7									
	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
ge per annum - standard tariff	£/prop	132.6	136.31	136.31	136.31	133.45	133.45	136.78	140.20	143.71	147.44
ed charge per annum - for properties receiving relief from charges	£/prop	111.09	0								
£ of rateable value	p/£RV	2.55	2.62	2.62	2.62	2.56	2.56	2.63	2.69	2.76	2.83
	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
charges - properties paying standard tariffs	સ	6,450,990	6,571,572	6,571,572	6,571,572	6,433,569	6,433,569	2,116,520	2,169,433	2,223,669	2,281,485
charges - properties receiving relief from charges	G	624,548						·			
harges - properties paying standard tariffs	3	10,964,771	11,142,895	11,142,895	11,142,895	10,908,894	10,908,894	3,588,817	3,678,537	3,770,500	3,868,533
harges - properties receiving relief from charges	GI	1,090,120									
enu	GI	19,130,428	17,714,466	17,714,466	17,714,466	17,342,462	17,342,462	5,705,337	5,847,970	5,994,170	6,150,018
s increase in total revenue	%		-7.40%	%00:0	%00:0	-5.10%	%00:0	-67.10%	2.50%	2.50%	2.60%
evenues	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	3			19,017,290	17,714,466	17,714,466	17,342,462	17,342,462	17,776,024	5,847,970	5,994,170
ear	ડા			19,017,290	17,714,466	17,342,462	17,342,462	17,776,024	18,220,425	5,994,170	6,150,018

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

			W	Water: Household Measured	d Measured						
Household Properties - billed on measured basis: tariff meters	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Number of meters	'n	438	438	438	438	438	438	438	438	438	438
Total number of billed properties	'n	438	438	438	438	438	438	438	438	438	438
Volumes - Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 25m ³ na maters /- 20mm	E	10.950	10 950	10 950	10 950	10 950	10 950	10 950	10 950	10 950	10 950
Volume over 25m³ pa, meters <= 20mm	°E	59,130	59,130	59,130	59,130	59,130	59,130	59,130	59,130	59,130	59,130
Total	_e E	70,080	70,080	70,080	70,080	70,080	70,080	70,080	70,080	70,080	70,080
Tariffs - Fixed Charge Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<=20mm	£/meter	120.00	123.36	123.36	123.36	120.77	120.77	123.79	126.88	130.06	133.44
Tariffs - Volumetric Charges: Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 25m ³ pa, meters of diameter <= 20mm	£/m3	1.88	1.94	1.94	1.94	1.90	1.90	1.94	1.99	2.04	2.10
Volumes over 25m3 pa, meters of diameter <= 20mm	£/m3	89.0	0.70	0.70	0.70	69.0	69.0	0.70	0.72	0.74	0.76
Revenue - Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	3	52,560	54,032	54,032	54,032	52,897	52,897	54,219	52,575	56,964	58,445
Meters of diameter <= 20mm, annual volume <= 25m ³	3	20,630	21,210	21,210	21,210	20,765	20,765	21,284	21,816	22,361	22,943
Meters of diameter <= 20mm, annual volume > 25m3	3	40,386	41,509	41,509	41,509	40,638	40,638	41,654	42,695	43,762	44,900
Total Revenue	3	113,576	116,751	116,751	116,751	114,299	114,299	117,157	120,086	123,088	126,288
Percentage increase in total revenue	3		2.80%	%00:0	%00'0	-5.10%	%00'0	2.50%	2.50%	2.50%	2.60%
Notional revenues	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	3			116,751	116,751	116,751	114,299	114,299	117,157	120,086	123,088
Charging year	3			116,751	116,751	114,299	114,299	117,157	120,086	123,088	126,288

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Water: Non-household Measured

April Touth Materia		2004 05	2000	20000 02	9002 00	00 0000	0000	77 0700	07 7700	07.0700	0000
senoid tariii Meters		C0-4-02	0-6002	70-0007	0-7002	60-0007	2009-10	71-0102	21-1102	2012-13	2013-14
	=	68,623	69		73	75,855	78,032	112,946	115,123	117,300	119,477
mmi	'n	296,6	9	é	6,289	6,289	6,289	6,289	6,289	6,289	6,289
0mm	'n	1,168	737			737	737	737	737	737	737
0mm	'n	1,040	929	929	929	929	929	929	929	929	929
0mm	'n	388				242	245	242	245	245	245
00mm	1	163				103	103	103	103	103	103
50mm	'n	65		45		42	42	42	42	42	42
200mm	È	2				9	9	9	9	9	9
250mm	'n										
300mm	-	r.	4	4	4	4	4	4	4	4	7
400mm	: E				ľ						
450mm	2		-		-	-	-	-	-	-	
ROOmm	è										
	Ē										
1013	i T					. 00		000	000		- 107
nber of tariff meters	'n	81,425				83,938	86,115	121,029	123,206	125,383	127,560
nber of blilled properties		9,219	/3,109	75,286	//,463	/9,640	/18,18	116,/31	808,811	121,085	123,262
- Measured Non-household Properties	Ilnite	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2019-13	2013-14
						100 070			100000	077	
pa - meters of diameter <= 20mm	E	1,445,000		1,539,435		1,648,285	1,702,710	2,575,560	2,629,985	2,684,410	2,738,83
over 25m² pa, meters of diameter <= 20mm	°E	30,315,000				32,363,608	33,029,770	43,713,454	44,379,616	45,045,778	45,711,94(
II/a, meters > 20mm, standard tariff (including LUVA)	"E	54,363,027	54,836,656	54,836,656	54,836,656	54,836,656	54,836,656	54,836,656	54,836,656	54,836,656	54,836,656
250 Mi/a, standard tariff	E E	1,383,719	1,375,719	1,358,031	1,340,571	1,323,335	1,306,320	1,289,525	1,272,945	1,256,579	1,240,423
a, standard tariff	°E	2,044,490	2,040,490	2,003,761	1,967,693	1,932,275	1,897,494	1,863,339	1,829,799	1,796,862	1,764,519
250 Mi/a, LUVA rate	E H	7,681,694	8,272,273	8,165,915	8,060,924	7,957,284	7,854,976	7,753,983	7,654,289	7,555,877	7,458,730
a. LUVA rate	E E	15,567,116	2			26,243,965	25,771,573	25,307,685	24.852.147	24.404.808	23,965,521
///a. non-standard rate	_E	1,758,051		700,000		700,000	700,000	200,007	200,000	200,000	700,007
250 Mi/a non-standard rate	e E	2 550 000	-		-	1010018	997 033	984 214	971 559	959 068	946 737
(a non-standard rate	E E	34 748 764	0			19 445 083	19 095 072	18 751 361	18 413 836	18 082 387	17 756 904
di los camonas de la composición del composición de la composición de la composición de la composición del composición de la composición de la composición de la composición de la composición de la composición de la composición del composición de la composición del composición del composición del composición del composición del composición del composici	"E	151 856 860 0	1.4	7	1/	147 460 509 4	147 101 604 4	157 775 776 8	157 540 833 1	157 322 425 8	157 120 265 0
]										
ixed Charge - Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	£/meter	120.00	123.36	123.36	123.36	120.77	120.77	123.79	126.88	130.06	133.44
mm	£/meter	357.00	367.00	367.00		359.29	359.29	368.28	377.48	386.92	396.98
0mm	£/meter	1,010.00	1,038.00	1,038.00	-	1,016.20	1,016.20	1,041.61	1,067.65	1,094.34	1,122.79
0mm	£/meter	2,244.00	2,307.00	2,307.00		2,258.55	2,258.55	2,315.02	2,372.89	2,432.21	2,495.45
30mm	£/meter	6,528.00		6,711.00	6,711.00	6,570.07	6,570.07	6,734.32	6,902.68	7,075.25	7,259.20
00mm	2/meter	13.770.00		14.156.00		13.858.72	13,858.72	14.205.19	14,560.32	14.924.33	15,312,36
150mm	£/meter	39,780.00				40.035.23	40,035.23	41,036.11	42,062.01	43,113.56	44,234.51
200mm	2/meter	86.700.00				87.256.31	87.256.31	89,437,72	91.673.66	93,965,50	96,408.61
250mm	£/meter	157,080.00			161,478.00	158,086.96	158,086.96	162,039.14	166,090.11	170,242.37	174,668.67
300mm	£/meter	253,980.00	261,091.00	261,091.00	261,091.00	255,608.09	255,608.09	261,998.29	268,548.25	275,261.95	282,418.77
400mm	£/meter	530,400.00				533,800.73	533,800.73	547,145.75	560,824.39	574,845.00	589,790.97
450mm	£/meter	721,140.00				725,764.03	725,764.03	743,908.13	762,505.83	781,568.48	801,889.26
600mm	£/meter	1,538,160.00	1,581,228.00	1,581,228.00	1,581,228.00	1,548,022.21	1,548,022.21	1,586,722.77	1,626,390.84	1,667,050.61	1,710,393.92
iters	£/meter										
Volumetric Charges: Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
3 na maters of diameter /= 20mm	5/m3	1 88				1 an	1 90	1 94	1 90	2 0.4	2 10
wer 25m3 no maters of dismater /= 20mm	5/m3	89.0				0.69	690	07.0	0.70	0.74	0.76
Wa maters > 20mm standard tariff (including LTIVA)	£/m3	0.68				69 0	0.69	0.70	0.72	0.74	0.76
250 Mi/a standard tariff	£/m3	0.56				0.56	0.56	0.58	0.59	0.61	0.62
(a clandard tariff	5/m3	0.50				0.51	0.51	0.53	0.54	0.55	0.57
a, statitualo talli	E	0.0	0.02	0.02	20.0	000	0.00	0.00	1000	0.00	0.0
200 MWa, LUVA rate	χ/Ш.	1				0.450	04:0	0.44	0.40	0.40	0.40
a, LUVA rate	s, m,	0.40				0.39	0.39	0.40	0.41	0.92	4.0
Il/a, average non-standard rate	ž,m,	0.33		0.20	0.20	0.20	0.20	0.20	0.27	0.27	0.2
250 Ml/a, average non-standard rate	, m/3	0.33	0.26			0.25	0.25	0.26	0.27	0.27	0.28
'a, average non-standard rate	5/m ₃	0.33		0.26	0.26	0.25	0.25	0.26	0.27	0.27	0.28

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Revenue - Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	cu	25,094,033	19,858,818	20,547,099	20,815,654	20,641,440	20,904,355	25,748,922	26,668,870	27,618,723	28,627,302
First 25m³ pa - meters of diameter <= 20mm	GI	2,722,380	2,876,445	2,981,886	3,087,307	3,125,681	3,228,888	5,006,196	5,239,783	5,481,921	5,738,484
Volume over 25m ³ pa, meters of diameter <= 20mm	СH	20,705,145	21,316,230	21,783,962	22,251,607	22,242,149	22,699,974	30,793,482	32,044,321	33,338,457	34,711,103
<= 100 Ml/a, meters > 20mm, standard tariff (including LUVA)	CH	37,129,948	38,495,333	38,495,333	38,495,333	37,686,931	37,686,931	38,629,104	39,594,832	40,584,702	41,639,905
>100 <= 250 MVa, standard tariff	GI	776,266	793,790	783,584	773,509	747,529	737,918	746,641	755,468	764,398	774,189
> 250 Ml/a, standard tariff	сų	1,042,690	1,069,217	1,049,971	1,031,071	991,249	973,407	979,783	986,200	992,660	1,000,136
>100 <= 250 Ml/a, LUVA rate	сı	3,379,946	3,639,800	3,593,002	3,546,807	3,427,680	3,383,609	3,423,609	3,464,081	3,505,031	3,549,925
> 250 Mi/a, LUVA rate	CH	6,226,846	11,085,492	10,885,953	10,690,006	10,277,137	10,092,148	10,158,252	10,224,788	10,291,761	10,369,278
<= 100 Ml/a, non-standard rate	GI	573,593	180,866	180,866	180,866	177,068	177,068	181,494	186,032	190,682	195,640
>100 <= 250 MVa, non-standard rate	сı	831,980	271,299	267,811	264,367	255,488	252,203	255,185	258,201	261,253	264,600
> 250 Ml/a, non-standard rate	GI	11,337,364	5,305,592	5,210,091	5,116,309	4,918,707	4,830,170	4,861,808	4,893,653	4,925,706	4,962,807
Total	G.	109,820,191	104,892,880	105,779,557	106,252,836	104,491,058	104,966,672	120,784,475	124,316,229	127,955,295	131,833,369
Percentage increase in total revenue	сı		-4.5%	%8'0	0.4%	-1.7%	0.5%	15.1%	2.9%	2.9%	3.0%
Notional revenues - 20mm meter tariff basket	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	CH			32,545,428	32,744,434	33,586,211	33,704,848	34,528,795	36,236,562	51,025,641	53,188,584
Charging year	3			32,545,428	32,744,434	32,880,900	33,704,848	35,392,015	37,142,476	52,301,282	54,571,487
Notional revenues - other metered tariff basket	Onits	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	CH			77,062,231	72,148,446	72,193,346	70,316,679	69,962,263	71,354,277	72,778,445	74,235,551
Charaing year	G			77 069 994	70 149 AAE	70 677 286	70 316 679	74 744 949	70 100 107	74 597 907	78 18E 87E

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Waste water: Household Unmeasured

ehold Properties - billed unmeasured	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
er of Band "A*" properties, paying full charge	'n	576	599	412	458	203	548	594	689	685	730
and "A*" properties, with 25% discount	'n	409	452	820	912	1,004	1,096	1,188	1,281	1,373	1,465
and "A*" properties, with 50% discount	ıu	4	5	1	2	2	2	2	8	8	8
er of Band "A" properties, paying full charge	ııı	197,512	192,740	144,265	140,432	136,599	132,765	128,932	125,099	121,265	117,432
and "A" properties, with 25% discount	'n	305,661	306,688	363,629	363,640	363,650	363,661	363,672	363,682	363,693	363,704
and "A" properties, with 50% discount	'n	15,329	15,896	3,864	3,883	3,901	3,919	3,937	3,955	3,973	3,991
er of Band "B" properties, paying full charge	'n	278,219	274,373	221,118	218,643	216,167	213,691	211,215	208,740	206,264	203,788
and "B" properties, with 25% discount	'n	249,380	252,934	313,900	316,667	319,433	322,199	324,965	327,732	330,498	333,264
and "B" properties, with 50% discount	'n	9,206	9,658	2,392	2,443	2,495	2,546	2,597	2,648	2,699	2,750
er of Band "C" properties, paying full charge	'n	194,806	194,343	170,456	170,399	170,343	170,286	170,229	170,173	170,116	170,060
and "C" properties, with 25% discount	'n	129,712	132,313	163,464	166,193	168,922	171,652	174,381	177,110	179,839	182,568
and "C" properties, with 50% discount	'n	6,220	6,425	1,611	1,643	1,674	1,706	1,737	1,769	1,800	1,832
er of Band "D" properties, paying full charge	'n	167,528	168,069	162,362	163,597	164,831	166,066	167,300	168,535	169,769	171,004
and "D" properties, with 25% discount	'n	78,867	80,935	94,421	96,733	99,044	101,356	103,667	105,979	108,291	110,602
and "D" properties, with 50% discount	ıu	5,471	5,747	1,478	1,540	1,603	1,665	1,727	1,790	1,852	1,914
er of Band "E" properties, paying full charge	ıu	189,342	191,229	191,462	194,248	197,033	199,818	202,604	205,389	208,174	210,960
and "E" properties, with 25% discount	ııı	59,566	61,319	906'69	72,088	74,272	76,455	78,638	80,821	83,004	85,187
and "E" properties, with 50% discount	ıu	4,871	5,146	1,347	1,421	1,494	1,567	1,640	1,713	1,786	1,859
er of Band "F" properties, paying full charge	'n	103,023	105,229	108,895	112,193	115,491	118,789	122,088	125,386	128,684	131,983
and "F" properties, with 25% discount	'n	23,886	24,787	27,689	28,738	29,786	30,834	31,882	32,930	33,979	35,027
and "F" properties, with 50% discount	ıu	2,628	2,839	292	826	288	948	1,009	1,070	1,131	1,192
er of Band "G" properties, paying full charge	ıu	67,836	960'69	71,678	73,504	75,331	77,157	78,983	608'08	82,636	84,462
and "G" properties, with 25% discount	ıı	12,049	12,552	13,649	14,164	14,680	15,196	15,712	16,227	16,743	17,259
and "G" properties, with 50% discount	ıu	1,721	1,845	492	975	293	598	633	899	203	738
er of Band "H" properties, paying full charge	'n	6,591	6,723	7,016	7,159	7,302	7,445	7,589	7,732	7,875	8,018
and "H" properties, with 25% discount	nr	834	869	929	296	1,005	1,043	1,081	1,118	1,156	1,194
and "H" properties, with 50% discount	'n	266	287	92	81	87	92	86	103	108	114
number of billed properties	ıı	2,111,513	2,123,100	2,138,096	2,153,102	2,168,102	2,183,100	2,198,100	2,213,101	2,228,099	2,243,100
er of Band "D" equivalents	'n	1,757,201	1,769,222	1,770,184	1,787,657	1,805,128	1,822,596	1,840,069	1,857,537	1,875,006	1,892,478
	Onits	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
) Charge	3	179.55	184.50	188.19	191.95	191.95	191.95	196.75	201.67	206.71	212.09
		20000	90 2000	0000	0002 000	00 0000	07 0000	20040	0044 40	0040040	0040 44
ne	Onits	2004-05	2002-00	70-9002	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
evenue	ક	315,505,484	326,421,515	333,130,937	343,147,608	346,501,206	349,854,292	362,038,355	374,612,190	387,588,649	401,371,551
tage increase in total revenue	%		3.46%	2.06%	3.01%	%86.0	0.97%	3.48%	3.47%	3.46%	3.56%
nal revenues	Onits	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
) year	G.			324,203,631	332,949,945	339,793,556	343,147,608	346,501,206	358,600,649	371,089,314	383,977,494
טט עפטר	G			330 687 703	339 608 944	339 793 556	343 147 608	355 163 736	367 565 666	380 366 547	909 096 565

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7,005,363 7.180,497 24,300,783 24,908,302 4,947,475 23,708,081 24,300,783 23,708,081 23,708,081 24,216,630 23,708,081 Waste water: Non-household Unmeasured 24,216,630 24,216,630 **2007-08** 6,686,2 2007-08 26,210,180 26,210,180 Units £m £m Units

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			Waste	Waste water: Household Measured	hold Measure	70					
Household Properties - billed on measured basis: tariff meters -	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Number of meters	JU	158	158	158	158	158	158	158	158	158	158
Total number of billed properties	nr	158	158	158	158	158	158	158	158	158	158
						•				•	
Volumes - Measured Household Properties	Units	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 23.75m ³ pa, meters <= 20mm	E _E	3,753	3,753	3,753	3,753	3,753	3,753	3,753	3,753	3,753	3,753
Volume over 23.75m ³ pa, meters <= 20mm	_E E	12,838	12,838	12,838	12,838	12,838	12,838	12,838	12,838	12,838	12,838
Total	_e m	16,591	16,591	16,591	16,591	16,591	16,591	16,591	16,591	16,591	16,591
Tariffe - Maseurad Household Dronarties	Pinite	2004-05	2005-06	2006-07	2007-08	00-8006	2000-10	2010-11	2011-12	2012-13	2013-14
Taillis - measured nouselloid riopelities		2004-03	20-5002	70-0002	2007-00	2008-03	2003-10	2010-11	2011-12	2012-13	41-5102
<=20mm	£/meter	120.00	123.36	123.36	123.36	120.77	120.77	123.79	126.88	130.06	133.44
Tariffs - Volumetric Charges: Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 23.75m ³ pa, meters of diameter <= 20mm	£/m3	2.37	2.44	2.44	2.44	2.39	2.39	2.45	2.51	2.57	2.64
Volume over 23.75m ³ pa, meters of diameter <= 20mm	£/m3	1.12	1.15	1.15	1.15	1.13	1.13	1.16	1.19	1.22	1.25
Revenue - Measured Household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	3	18,960	19,491	19,491	19,491	19,082	19,082	19,559	20,048	20,549	21,083
Meters of diameter <= 20mm, annual volume <= 23.75m ³	3	8,902	9,151	9,151	9,151	8,959	8,959	9,183	9,413	9,648	668'6
Meters of diameter <= 20mm, annual volume > 23.75m ³	G	14,404	14,807	14,807	14,807	14,496	14,496	14,858	15,230	15,610	16,016
Total Revenue	હ	42,266	43,449	43,449	43,449	42,537	42,537	43,600	44,690	45,807	46,998
Percentage increase in total revenue	%		2.8%	%0.0	0.0%	-5.1%	%0.0	2.5%	2.5%	2.5%	2.6%
Notional revenues	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	3			43,449	43,449	43,449	42,537	42,537	43,600	44,690	45,807
Charging year	3			43,449	43,449	42,537	42,537	43,600	44,690	45,807	46,998

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Waste water: Non-household Measured

Non-household Tariff Meters	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<=20mm	'n	49,137	48,112	50,289	52,466	54,643	56,820	91,734	93,911	96,088	98,265
>20 <=25mm	'n	5,597	2,523	2,523	2,523	2,523	2,523	2,523	2,523	2,523	2,523
>25 <= 40mm	'n	745	336	336	336	336	336	336	336	336	336
>40 <= 50mm	ы	611	276	276	276	276	276	276	276	276	276
> 50 <= 80mm	'n	196	88	88	88	88	88	88	88	88	88
>80 <= 100mm	'n	29	27	27	27	27	27	27	27	27	27
>100 <= 150mm	1	12	S	S	LC)	S	5	S	52	ıs	C)
>150 <= 200mm	1	-	-	-	-	-	-	-	-	-	-
>200 <= 250mm	7										
>250 <= 300mm	1	-	-	-	-	-	-	-	-	-	-
>300 <= 400mm	'n										
> 400 <= 450mm	1										
>450 <= 600mm	7										
Other meters	7										
Total number of tariff meters	'n	56.359	51.369	53.546	55.723	57.900	60.077	94 991	97.168	99.345	101.522
Total number of billed properties	E		49,354	51,531	53,708	55,885	58,062	92,976	95,153	97,330	99,507
Volumes - Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 23 75m ³ na - maters of diameter <- 20mm	₆	977 446	1 024 946	1 030 793	1 082 497	1 134 201	1 185 904	2 015 112	2 066 816	2 118 519	2 170 223
Filst 23.7 Jill pa "Hieters of digitieter <= 2011111	E 8		046,430,1	1,000,130	1,000,047	1,104,401	+06,000,004	211,010,000	2,000,010	2,110,013	2,170,220
Volume over 23.75m" pa, meters of diameter <= 20mm	È	16,5/3,000	16,611,000	17,225,458	17,839,917	18,454,375	19,068,833	28,923,310	29,537,768	30,152,226	30,766,684
Volume for other meters, charged at standard tariffs	È	25,645,384	24,379,908	24,161,738	23,947,348	23,736,670	23,529,640	23,326,195	23,126,270	22,929,806	22,736,741
Volume charged at non-standard rate	e E	494,742	494,742	494,742	494,745	494,745	494,742	494,742	494,742	494,745	494,742
Total	_e m	43,690,572	42,510,596	42,912,732	43,364,503	43,819,987	44,279,120	54,759,358	55,225,596	55,695,294	56,168,391
Tariffs - Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
20mm	s/meter	120 00	123.36	123.36	123.36	120 77	120 77	123 79	126 88	130.08	133 44
>20 <=25mm	£/meter	357.00	367.00	367.00	367.00	359.29	359.29	368.28	377.48	386 92	396 98
205 /= 40mm	£/motor	1 010 00	1 038 00	1 038 00	1 038 00	1 016 20	1 016 20	1 041 61	1 067 65	1 094 34	1 122 79
>40 >= 50mm	S/motor	2 2 3 4 00	00.000,0	00.000,0	00.000,1	0.010.50	0.010.0	0.146.0	00.700,0	1004.04	0 405 45
- 50 - 00mm	C/motor	00.444.00	2,307.00	2,307.00	2,307.00	2,000,00	2,200.00	20.010.2	2,072,03	2,452.2	7 250 20
> 0C <	z/meter	6,528.00	6,711.00	0,111,00	0,711.00	0.070.07	6,570.07	b,734.32	6,902.68	07.070,7	02.662,7
>80 <= 100mm	z/meter	13,770.00	14,156.00	14,156.00	14,156.00	13,858.72	13,858.72	14,205.19	14,560.32	14,924.33	15,312.36
>100 <= 150mm	z/meter	39,780.00	40,894.00	40,834.00	40,894.00	40,035.23	40,035.23	41,036.11	42,062.01	43,113.56	44,234.51
>150 <= 200mm	£/meter	86,700.00	89,128.00	89,128.00	89,128.00	87,256.31	87,256.31	89,437.72	91,673.66	93,965.50	96,408.61
>200 <= 250mm	£/meter	157,080.00	161,478.00	161,478.00	161,478.00	158,086.96	158,086.96	162,039.14	166,090.11	170,242.37	174,668.67
>250 <= 300mm	E/meter	253,980.00	261,091.00	261,091.00	261,091.00	525,608.09	555,608.09	261,998.29	268,548.25	2/5,261.95	282,418.//
>300 <= 400mm	£/meter	530,400.00	545,251.00	545,251.00	545,251.00	533,800.73	533,800.73	547,145.75	560,824.39	574,845.00	589,790.97
> 400 <= 450mm	z/meter		/41,332.00	/41,332.00	/41,332.00	725,764.03	725,764.03	/43,908.13	762,505.83	781,558.48	801,889.26
>450 <= 600mm	£/meter	1,538,160.00	1,581,228.00	1,581,228.00	1,581,228.00	1,548,022.21	1,548,022.21	1,586,722.77	1,626,390.84	1,667,050.61	1,710,393.92
Other meters	£/meter										
Tariffs - Volumetric Charges: Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
First 23.75m ³ pa. meters of diameter <= 20mm	£/m3	2.37	2.44	2.44	2.44	2.39	2.39	2.45	2.51	2.57	2.64
Volume over 23.75m3 pall maters of diameter <= 20mm	c/m3	1 12	1.15	1.15	1.15	1.13	1.13	1 16	1 19	122	1 25
Volume rate for other meters, charged at standard tariffs	E/m3	112	115	115	115	1.13	1.13	1 16	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 22	125
Volume rate for other meters, charged at non-standard tariffs	s/m3	2.43	2.46	2.46	2.46	2.41	2.41	2.47	2 53	0 80	2 66
	2										
Revenue - Measured Non-household Properties	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	ů.	12 928 061	9374 006	9 642 561	9 911 116	9 965 897	10 228 812	14 806 491	15 452 878	16 122 331	16 832 004
First 23.75m3 pa. meters of diameter <= 20mm	G	2,318,502	2,498,818	2.513,074	2,639,128	2,707,112	2,830,519	4,929,915	5,182,817	5,445,283	5,723,211
Volume over 23.75m3 pa, meters of diameter <= 20mm	ı G	18,594,906	19,152,483	19,860,953		20,831,058	21,524,651	33,464,462	35,029,779	36,652,447	38,371,754
Other meters, charged at standard tariffs	3	28,774,121	28,110,034	27,858,484		26,793,644	26,559,952	26,988,563	27,426,180	27,873,017	28,356,928
Other meters, charged at non-standard tariffs	G	1,200,244	1,218,550	1,218,550		1,192,960	1,192,960	1,222,784	1,253,354	1,284,687	1,318,089
Total	ઝ		60,353,891	61,093,622		61,490,673	62,336,894	81,412,215	84,345,008	87,377,765	90,601,985
Percentage increase in total revenue	%		-5.42%	1.23%		-0.74%	1.38%	%09:08	3.60%	3.60%	3.69%
Notional revenues - 20mm meter tariff basket	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	G			27,553,223	27,586,398	28,577,678	29,057,461	30,137,375	31,997,722	50,993,758	53,431,551
Charging year	3			27,553,223	27,586,398	27,977,547	29,057,461	30,890,810	32,797,665	52,268,602	54,820,771
Notional revenues - other metered tariff basket	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Setting year	G			38,016,171	32,767,494	32,515,944	31,591,108	31,353,297	31,897,595	32,453,762	33,022,082
Charging year	3			38,016,171	32,767,494	31,833,109	31,591,108	32,137,130	32,695,035	33,265,106	33,880,656

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Surface Water Drainage: Household Measured

sed property drainage for household properties billed measured	Units	2004-05 2005-06	L	2006-07 2007-08	-08	2008-09	2009-10	2010-1	-	2011-12	2012-13	2013-14
er of Band "A*" properties, paying full charge	u	0	0	0	0	0	0		0	0	0	
and "A*" properties, with single person discount	ш	0	0	0	0	0	0		0	0	0	
and "A*" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
rr of Band "A" properties, paying full charge	'n	0	0	0	0	0	0		0	0	0	
and "A" properties, with single person discount	'n	0	0	0	0	0	0		0	0	0	
and "A" properties, with second home discount	ıu	0	0	0	0	0	0		0	0	0	
er of Band "B" properties, paying full charge	ıı	0	00	0	0	0	0		0	0	0	
and "B" properties, with single person discount	E 8	0 0		5 0	0	0			0 0	5 6	5 0	
and by properties, with second home discount	= 1			0 0	0 0	0			0 0	0 0		
and "C" properties, with single person discount	E	0		0	0	0	0		0	0	0	
and "C" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
er of Band "D" properties, paying full charge	nr	285 28	32	285	285	285	285		285	285	285	2
and "D" properties, with single person discount	ııı	0	0	0	0	0	0		0	0	0	
and "D" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
er of Band "E" properties, paying full charge	'n	0	0	0	0	0	0		0	0	0	
and "E" properties, with single person discount	ш	0	0	0	0	0	0		0	0	0	
and "E" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
er of Band "F" properties, paying full charge	E	0	000	0 0	0	0			0 0	0 0	0	
and "F" properties, with second home discount	= 2			0 0	0 0	0 0			0 0	0 0	0	
and properties, with second notice discount	È		0 0	0 0	0 0	0 0			0 0	0 0		
and "G" properties, with single person discount	E	0 0		0 0	0 0				0 0	0		
and "G" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
יר of Band "H" properties, paying full charge	'n	0	0	0	0	0	0		0	0	0	
and "H" properties, with single person discount	ııı	0	0	0	0	0	0		0	0	0	
and "H" properties, with second home discount	ш		0	0	0	0	0		0	0	0	
er of bille	'n	285 285	32	285	285	282	285		285	285	285	286
er of Band "D" equivalent properties	υL		32	285	282	285	285		285	285	285	2
sed roads drainage for household properties billed measured	Units	2004-05 2005-06	Ļ	2006-07 2007	-08	2008-09	2009-10	2010-1	L	2011-12	2012-13	2013-14
er of Band "A*" properties, paying full charge	JL.	0	0	0	0	0	0		0	0	0	
and "A*" properties, with single person discount	ııı	0	0	0	0	0	0		0	0	0	
and "A" properties, with second home discount	'n	0	0	0	0	0	0		0	0	0	
er of Band "A" properties, paying full charge	È	0	0	0	0	0	0		0	0	0	
and "A" properties, with single person discount	Ŀ	0	0 0	0	0	0	0		0	0	0	
and A properties, with second nome discount	= 2	0 0		5 6	0	0			0 0	5 6	0	
er or barro properties, paying run charge	È			0 0	0 0					0		
and "B" properties, with second home discount	E			0 0	0				0 0	0		
er of Band "C" properties, paving full charge	E	0	0	0	0	0	0		0	0	0	
and "C" properties, with single person discount	JU	0	0	0	0	0	0		0	0	0	
and "C" properties, with second home discount	ıu	0	0	0	0	0	0		0	0	0	
er of Band "D" properties, paying full charge	лL	285 285	32	285	285	285	285		285	285	285	2
and "D" properties, with single person discount	'n	0	0	0	0	0	0		0	0	0	
and "D" properties, with second home discount	L à	0	000	0 0	0 0	0 0	0 0		0 0	0 0	0 0	
er or barror properties, paying run charge	È			0 0	0 0					0		
and "E" properties, with second home discount	= =			5 6	0 0	0			0 0	0 0		
and E properties, with second home discount	= =	0 0		0 0	0 0	0 0			0 0	0 0	0	
and "F" properties, with single person discount	JU	0	0	0	0	0	0		0	0	0	
and "F" properties, with second home discount	ıu	0	0	0	0	0	0		0	0	0	
er of Band "G" properties, paying full charge	ш	0	0	0	0	0	0		0	0	0	
and "G" properties, with single person discount	uL	0	0	0	0	0	0		0	0	0	
and "G" properties, with second home discount	i i	0	0 0	5 6	0 0	0	0		0 0	0 0	0	
or or barrow in properties, paying run charge	È			0 0	0 0	0 0			0 0			
and "H" properties, with second home discount	È			0 0	0 0	0 0			0 0	0 0		
umber of billed properties	E	285 28	32	282	285	285	285		285	285	282	2
er of Band "D" equivalent properties	nr	285 285	32	285	285	285	285		285	285	285	2
									•			
	Units	2005-06		2006-07 2007	90-		2009-10	2010-11			2012-13	2013-14
D" Charge - property drainage	£/prop		2	36.92	36.92	36.14	36.14		37.05	37.97	38.92	39.6
D" Charge - roads drainage	£/prop	35.91 36.92	2	36.92	36.95	36.14	36.14		37.05	37.97	38.92	39.94

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			Surface W	Surface Water Drainage: Household Measured	Household Mea	sured					
	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
drainage for metered household customers	GI	10,234	10,522	10,522	10,522	10,301	10,301	10,559	10,823	11,093	11,382
ainage for metered household customers	GI	10,234	10,522	10,522	10,522	10,301	10,301	10,559	10,823	11,093	11,382
nue	G	20,469	21,044	21,044	21,044	20,602	20,602	21,118	21,645	22,187	22,763
ge increase in total revenue	%		2.81%	%00'0	%00'0	-5.10%	%00'0	5.50%	2.50%	5.50%	2.60%
revenues	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
ar	3			21,044	21,044	21,044	20,602	20,602	21,118	21,645	22,187
J.Com	ú			NNO 10	01 044	008.00	009.00	01110	21 GAE	701 00	92 769

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Control of the cont	sehold Properties - billed on unmeasured basis	Onits	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
The control of the	paying standard tariff - area based	2	215	215	215	215	215	215	215	215	215	215
The control of the	paying non-standard tariff - area based	'n										
The color of the	receiving relief from charges - area based paving standard RV fariff - property drainage		106 765	98 875	101 052	103 229	105 406	107 583	109 760	111 937	114 114	116.291
This control	paying non-standard RV tariff - property drainage	=										
Thirty Colored Book	receiving relief from charges - property drainage	'n	1,295									
Units 2004-65 1000-60 2000-07 2000-60 2000-70 2000-6	paying standard RV tariff - roads drainage	'n		99,116	101,293	103,470	105,647	107,824	110,001	112,178	114,355	116,532
0.00 0.00 <th< td=""><td>paying non-standard HV tariit - roads drainage</td><td>E 8</td><td>- 1 206</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	paying non-standard HV tariit - roads drainage	E 8	- 1 206									
United Court Cou	Tecerring Teller Hottle Granges - Toacs Graningge	E	216,576	198,206	202,560	206,914	211,268	215,622	219,976	224,330	228,684	233,038
Things Control Contr		 [
State Stat	Value Base	Onits	- 11	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Comparison Com	for properties paying standard tariff - property drainage	m3	വ	2,403.4	2,446.9	2,490.4	2,534.0	2,577.5	2,621.1	2,664.6	2,708.1	2,751.7
Character Char	r properties paying non-standard charges - property drainage	E 8	. 1									
Character Char	for properties paving standard tariff - roads drainage	<u> </u>	2.662.3	2.513.7	2.557.2	2.600.8	2.644.3	2.687.8	2.731.4	2.774.9	2.818.5	2.862.0
Employee Employee	properties paying non-standard charges - roads drainage	υχ										
Line Em	properties receiving relief from charges - roads drainage	£m	52.2									
Units Em 2004-46 2005-46 2006-47 2007-48 2008-49 2008-10 2011-12 2011-12 2011-12 2011-13 2011-14 2	for properties paying standard tariff - area based	εm										
This could be continued by the continue of the could be continued by the could be continued by the could be continued by the could be continued by the could be could be could be continued by the could be could be could be continued by the could be could be could be continued by the could be could be could be could be continued by the could be could be could be continued by the could be could be could be could be continued by the could be could be could be could be compared by the could be could be could be could be compared by the could be compared by the could be could	properties paying non-standard charges - area based	m3										
Units 2004-05 2005-06 2015-05	properties receiving relief from charges - area based	шз										
μης μης 213.890 213.8	rea for area based drainage charge	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
This This	of proparties paying standard area-based charges	m ²	213 AGN	213 890	213 890	213 890	213 RQU	213 89D	213 890	213 AGN	213 890	213 R90
Units Digital Cond-06 Cond-0	f properties paying non-standard area-based charges	E E		-			1		1	1	1	1
DERIVATION CONTINUES 2006-06 2006-07 2007-08 2006-09 2006-10 2011-12 <td>f properties receiving relief from area-based charges</td> <td>m₂</td> <td></td>	f properties receiving relief from area-based charges	m ₂										
PUMIS 2004-05 2005-07 2005-07 2005-07 2005-07 2005-07 2005-07 2005-07 2005-09 2005-09 2015-11 2015-13		<u> </u> [
DEPTY DEPT		Onits	Ш	- 11		Ш	- 11	- 11			Ш	2013-14
pmRPV pcRNV 1 cond-dis pcRNV 2 cod distributed	sharge per £ of RV - property drainage	p/£RV	1.53	1.57	1.57	1.57	1.54	1.54	1.58	1.62	1.66	1.70
s DIM* 3182 32.72 32.72 32.03 32.03 32.65 34.49 34.49 34.49 34.49 34.49 36.62.982 32.04.65 32.04.65 32.04.61 30.00-01 30.00-10 30.00-11 30.00-11 30.00-11 30.00-11 30.00-13 44.91.171 44.91.171 44.91.171 44.91.171 42.91.171 42.91.171 44.91.171 <td>sharge per £ of RV - roads drainage</td> <td>p/£RV</td> <td>2.04</td> <td>2.10</td> <td>2.10</td> <td>2.10</td> <td>2.05</td> <td>2.05</td> <td>2.10</td> <td>2.16</td> <td>2.21</td> <td>2.27</td>	sharge per £ of RV - roads drainage	p/£RV	2.04	2.10	2.10	2.10	2.05	2.05	2.10	2.16	2.21	2.27
s DERIV 2004-05 2006-07 2007-08 2008-09 2008-10 2016-11 2011-12 2012-13 20 E 38,225-392 37,804,878 38,489,782 39,174,647 39,022,481 39,682,982 44,311,131 44,311,171 2012-13 20 E 7,855-63 37,804,878 54,287,994 54,286,556 55,180,416 57,476,133 58,821,48 62,311,042 E 1,065,849 53,624,960 54,287,994 54,286,556 55,180,416 57,476,133 58,821,48 62,311,042 E 1,065,849 68,974 69,874 69,874 69,874 69,874 69,874 69,876 70,217 71,973 73,772 E 1,065,847 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,874 69,816,820 10,303,844 107,295,99 10,3	rea-based tariff	p/m ²	31.82	32.72	32.72	32.72	32.03	32.03	32.83	33.65	34.49	35.39
Units 2004-05 2006-06 2007-08 2006-09 2006-09 2006-10 2011-12 2011-12 2011-12 2011-13	charge per ε of RV for properties paying area-based charges	p/£RV										
E 789.55.92 37.804.876 38,483.762 38,483.762 38,022.481 39,682.982 44,311.171 44,911.171		Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
E 765,563 1 </td <td>rainage - standard RV charges</td> <td>3</td> <td></td> <td>37,804,878</td> <td>38,489,762</td> <td>39,174,647</td> <td>39,022,481</td> <td>39,692,982</td> <td>41,372,571</td> <td>43,111,331</td> <td>44,911,171</td> <td>46,819,692</td>	rainage - standard RV charges	3		37,804,878	38,489,762	39,174,647	39,022,481	39,692,982	41,372,571	43,111,331	44,911,171	46,819,692
E 7785.563 52717.96 54,587.994 54,286.56 55,180.416 57,476.13 59,882.148 82,311.02 E 1,066.184 69,74 69,974 68,505 68,506 70,217 71,973 73,772 73,772 E 1,064.184 69,74 69,974 68,505 68,506 70,217 71,973 73,772 E 1,064.184 1,078 1,078 1,078 1,078 1,078 1,078 E 1,078 2,004.05 2,004.05 2,004.05 2,004.07 2,004.06 2,004.07 1,078 2,014.12 1,07,295.38 1 E 1,018 2,004.05 2,004.05 2,004.05 2,004.05 2,004.05 2,014.12 1,07,295.38 1 E 1,018 2,004.05 2,005.09 2,008.09 2,008.09 2,008.09 2,008.07 2,014.12 1,07,295.38 1 E 1,018 2,014.12 2,014.05 2,014.05 2,014.05 2,014.12 2,014.12 1,07,295.	rainage - non-standard RV charges	3						,				
E 54,11,604 52,711,926 54,287,594 54,285,556 55,180,416 57,475,139 56,851,148 62,311,042 E 1,066,349 69,974 69,974 69,974 66,506 70,217 77,277 77,377 77,277 E 1,066,349 69,974 69,974 66,506 66,506 770,217 77,1973 73,772 E 2 68,157,078 90,568,79 93,782,615 94,41,900 96,816,926 100,035,422 107,256,986 1 C 2 96,157,078 30,566,77 30,782,615 93,377,541 94,41,900 4,226 4,226 41,80 1 C 1 30,566,77 30	rainage - properties receiving relief from charges	CH .										
E 1,065,849 69,974 69,974 68,505 68,505 70,277 71,973 73,772 E 1,065,849 69,974 69,974 68,505 68,505 70,277 71,973 73,772 E 2 1,000,000 30,586,779 32,194,897 38,775,41 94,941,902 103,035,452 107,295,895 % 4,5% 1,7% 0,44% 1,7% 4,2% 4,1% 4,1% % 2004-05 2005-06 2005-06 2007-08 2008-09 30,317,541 2016-11 2011-12 2011-12 2011-12 2011-12 2011-13 101,391,895 4,1%	inage - standard RV charges	CH C		52,711,926	53,624,960	54,537,994	54,286,556	55,180,416	57,476,133	59,852,148	62,311,042	64,918,746
E CEO GORDING CEO	inage - non-standard nv charges	H G	1 065 849									. .
E Processes 157 of 20 Processes 2006-06 Process	je - standard area-based tariff	1 64	68,068	69,974	69,974	69,974	68,505	68,505	70,217	71,973	73,772	75,690
E C	ge - non-standard area-based charges	3										
E E E F	ge - properties receiving relief from area-based charges	3										•
E 95,157,078 90,588,779 92,184,697 93,782,615 98,377,541 94,941,903 98,918,922 103,035,452 107,285,588 % 4,2% 4,2% 1,7% 4,2% 4,2% 4,2% 4,1% Units 2004-05 2005-06 2006-07 2007-08 2008-09 37,194,697 31,131,180 201-11 2013-13 2013-13 10,391,895	ge - standard area-based RV tariff	(H)			•							
£ 96,157,078 90,586,779 92,184,697 92,184,697 93,77,541 94,941,903 98,918,922 103,035,452 107,295,985	ge - non-standard area-based RV tarill	M 0										
% 4.8% 1.8% 1.7% 0.4% 1.7% 4.2% 4.2% 4.1% Units 2004-05 2005-06 2005-07 2007-08 2008-09 2009-10 2010-11 2011-12 2017-13 <td>de Proposico ecceving esta nom area executiva esta ges</td> <td>1 (1</td> <td>95,157,078</td> <td>90,586,779</td> <td>92,184,697</td> <td>93,782,615</td> <td>93.377.541</td> <td>94.941.903</td> <td>98.918.922</td> <td>103.035,452</td> <td>107.295,985</td> <td>111,814,128</td>	de Proposico ecceving esta nom area executiva esta ges	1 (1	95,157,078	90,586,779	92,184,697	93,782,615	93.377.541	94.941.903	98.918.922	103.035,452	107.295,985	111,814,128
Units 2004-05 2005-07 2007-08 2008-09 2008-10 2011-11 2011-12 2012-13 2 E F 97.822.371 90.586,779 92.164.687 91.813.180 93.377.541 97.315.451 101.331.80	e increase in total revenue	%		-4.8%	1.8%	1.7%	-0.4%	1.7%	4.2%	4.2%	4.1%	4.2%
Units 2004-05 2005-06 2006-07 2007-08 2008-09 2009-10 2010-11 2011-12 2012-13 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2												
90,586,779 92,184,697 91,813,180 93,377,541 97,315,451 101,391,895	evenues	Onits	2004-05	2002-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	JE	sa e			97,822,371	90,586,779	92,184,697	91,813,180	93,377,541	97,315,451	101,391,895	105,611,338

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Trade Effluent: Standard and non-standard Mogden-based charges

Trade effluent dischargers	Onits	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Number paying standard rates	'n	719	1,171	1,448	1,593	1,802	1,802	1,802	1,802	1,802	1,802
Nulliber payriig Totir-standard rates Total	= =	719	1171	1448	1593	1802	1802	1802	1802	1802	1802
]										
Availability charging parameters	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Chargeable daily volume - standard rate	e.	19,226	35,496	57,277	65,411	76,378	76,378	76,378	76,378	76,378	76,378
Settled biological oxygen demand (sBODI) - charged at standard rate	kg/day	8,442	14,690	21,598	27,179	42,306	42,306	42,306	42,306	42,306	42,306
Suspended solids (TSSI) - charged at standard rate	kg/day	4,666	8,598	12,107	14,470	18,529	18,529	18,529	18,529	18,529	18,529
Chargeable volume - non-standard rate	E	287	287	287	287	287	287	287	287	287	287
Settled biological loxygon demand (SBODI) - charged at non-standard rate	kg/day	400	400	400	400	400	400	400	400	400	400
Suspendeu sonds (1551) - charged at non-standard rate	Kg/day	208	208	208	508	208	208	208	208	508	208
Scottish average sewage strength	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Sattled chamical ownen demand (Oe)	l/ow	350	350	350	350	Ш	350	350	350	350	350
Total suspended solids (Ss)	mg/l	250	250	250	250	250	250	250	250	250	250
Annual volumes and etranorth adjusted volumes	Ilnite	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
A thirties the control of the contro		022 232 2	10 404 04	47 000 466	10 202 007	40.065 400	40 204 070	077 000 77	40 547 440	45 604 560	44 000 000
Chrosoph adjusted inclinate for methods and the control of the con	E 78	11 056 450	22 400 640	22 400 126	10,093,307	19,200,129	40 569 059	40 494 006	10,317,440	26,402,502	24 667 977
Strength adjusted volume for suspended solids standard rate	- E	4 631 874	9 595 821	13.521.118	14 672 989	17.818.585	16.927.656	16.081.273	15 277 210	14.513.349	13.787.682
Actual volume discharged (AVD) - at non-standard rates	E E										
Strength adjusted volume for settled - at non-standard rates	"E										
Strength adjusted volume for suspended solids - at non-standard rates	m ₃										
Availability charge - fixed	Onits	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Reception charge (Ra) - standard rate	£/m³/day	0.08	0.08	0.08	80'0	80'0	0.08	0.08	0.08	0.08	60'0
Volumetric / primary charge (Va) - standard rate	£/m³/day	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	90:0	90'0
Biological capacity charge (Ba) - standard rate	£/m³/day	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.22
Sludge capacity charge (Sa) - standard rate	£/m³/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.19
Average reception charge for properties charged at non-standard rates	£/m²/day										
Average volumetric / primary charge for properties charged at non-standard rates	£/m²/day										
Average bloodgical cabacity orange for photoperines changed at non-standard rates Average clickee consider shared an expensive changed at any extraorder catalogical and activities of the control of the catalogical changes are considered as any extraorder catalogical cat	z/kg/day										
Average shoge capacity charge for costonies charged at not-standard lates	z/kg/day										
Operating charge - variable	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Reception charge (Ro) - standard rate	£/m3	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14
Volumetric / primary charge (Vo) - standard rate	£/m3	80.0	60'0	60'0	60'0	80'0	80'0	60.0	60'0	60:0	60'0
Secondary treatment charge (Bo) - standard rate (for Scottish average strength - sCOD)	£/m3	0.11	0.11	0.11	0.11	11.0	0.11	0.12	0.12	0.12	0.12
Sludge treatment charge (So) - standard rate (for Scottish average strength - SS)	£/m3	20:0	0.07	0.07	0.07	0.07	0.07	20.0	0.07	20.0	0.08
Average reception charge - non-standard rates	E/m3										
Average volumetric / primary charge - non-standard rates	£/m ₃										
Avge secondary treatment charge - non-standard rates (for (non-standard) Scottish average strength - sCOD)	£/m²										
Average sludge treatment charge - non-standard rates (for (non-standard) Scottish average strength - SS)	£/m³										
Revenue	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Availability charge (Ca) - customers paving standard rates	GI	1.855.806	3.358.989	5.151.828	6.110.563	7.853.553	7.853.553	8.049.892	8.251.139	8.457.418	8.677.311
Availability charge (Ca) - customers paying non-standard rates	cu										
Operating charge (Co) - customers paying standard rates	3	3,125,541	6,040,778	8,645,453	9,252,477	10,309,357	9,793,889	9,536,800	9,286,459	9,042,689	8,813,909
Operating charge (Go) - customers paying non-standard rates	cu										
Total 7	GI S	4,981,348	9,399,767	13,797,281	15,363,039	18,162,910	17,647,443	17,586,692	17,537,598	17,500,107	17,491,220
Percentage increase in total revenue	%		88.70%	46.78%	11.35%	18.22%	-2.84%	-0.34%	-0.28%	-0.21%	-0.05%
Notional revenues	Units	2004-05	2005-06	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Sattinn vaar	G			5 114 979	797 998 9	13 797 281	15 040 415	18 162 910	18 088 629	18 026 359	17 976 038
Charring year	0			5 114 979	9 399 767	13 507 538	15 040 415	18 616 983	18 540 844	18 477 018	18 443 415
Street Street											

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Trade effluent dischargers	Onits	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Number receiving harmonisation cap	'n	1040	623	349	207	0	0	0	0	0	
Number receiving treatment cap	J.U	44	80	9	2	0	0	0	0	0)
Total	È	1084	631	354	500	0	0	0	0	0	
Availability charging parameters	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
manufacture of the second of t		000 03	40.00	11001	000 07						
Chalgedore daily volume - narmonisation cap	E	93,020	40,233	10,010	10,000						
Settled blobglide Oxygen deniand (SDOD) - Irannonisation cap Suspended solids (TSS) - harmonisation cap	ka/day	12.801	9.795	6.304	3.989	0			0		
Chargeable volume - treatment cap	E E	4,125	647	490	365	0	0	0	0	0	
Settled biological oxygen demand (sBODI) - treatment cap	kg/day	9,920	7,834	7,660	6,785	0	0	0	0	0)
Suspended solids (TSSI) - treatment cap	kg/day	1,062	136	118	20	0	0	0	0	0	
Customers that do not pay with reference to the Mogden formula	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Number of customers that do not pay with reference to the Monden formula	-	02	20	29	67	29	29	29	29	29	67
Total revenue from customers that do not pay with reference to the Mogden formula	હ	8,500,000	8,500,000	8,246,170	8,500,000	8,500,000	8,500,000	8,500,000	8,500,000	8,500,000	8,500,000
Annual volumes and strength adjusted volumes	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Actual volume discharged (AVD) - harmonisation cap	E	14,027,096	9,180,324	3,331,082	1,534,374						
Strength adjusted volume for settled COD - harmonisation cap	"E	35,374,437	25,218,645	15,042,209	9,722,466						
Strength adjusted volume for suspended solids - harmonisation cap	m ₃	15,094,761	10,382,890	6,163,553	4,052,040						
Actual volume discharged (AVD) - treatment cap	E E	716,192	101,022	75,856	48,722						•
Strength adjusted volume for settled - treatment cap	E E	5,151,313	1,799,350	1,111,111	780,243						•
Strength adjusted volume for suspended solids - treatment cap	Em.	684,006	998'89	58,914	31,377						
Availability charge - fixed	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Reception charge (Ra) - harmonisation cap	E/m³/dav	90'0	90'0	0.05	0.05						
Volumetric / primary charge (Va) - harmonisation cap	£/m³/day	0.04	0.04	0.03	0.03						
Biological capacity charge (Ba) - harmonisation cap	£/m³/day	0.12	0.12	0.12	0.11				•		•
Sludge capacity charge (Sa) - harmonisation cap	£/m³/day	0.12	0.12	0.12	0.11						
Average reception charge for properties - treatment cap	£/m³/day	90:00	0.03	0.03	0.03						
Average volumetric / primary charge for properties - treatment cap	£/m³/day	0.04	0.02	0.02	0.02						
Average sludger capacity charge for customers - treatment caps Average sludge capacity charge for customers - treatment caps	£/kg/day	0.14	0.00	0.07	0.05						
Onemaline shours indishis		2004 05	90 3000	20 9000	00 2000	00 0000	2000 40	2040 44	0044400	0000	0040 44
Sporanting change an inches	ε _{m/3}	0.10	0.10	010	000						
Volumetric / primary charge (Vo) - harmonisation cap	_E m/3	0.07	0.07	0.07	20.0						
Secondary treatment charge (Bo) - harmonisation cap (for harmonisation cap average Scottish average strength - sCOD)	Em/3	80:0	0.08	80.0	80.0						
Sludge treatment charge (So) - harmonisation cap (for harmonisation cap average Scottish average strength - SS)	₂ ш/3	90.02	0.05	0.05	90.0						
Average reception charge - treatment caps	£/m/3	0.10	0.02	90.0	0.09						•
Average volumetric / primary charge - treatment caps	£m/3	90:0	0.03	0.04	90.0						
Avge secondary treatment charge - treatment cap (for treatment cap average Scottish average strength - sCOD)	Em/3	0.07	0.04	90.0	0.08						
Average sludge treatment charge - treatment cap (for treatment cap average Scottish average strength - SS)	,w/3	0.05	0.02	0.04	60:0						1
Revenue	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Availability charge (Ca) - customers receiving harmonisation caps	GI	3,507,499	2,754,791	1,419,159	809,027						
Availability charge (Ca) - customers receiving treatment caps	G	399,499	120,940	198,038	288,647						
Operating charge (Co) - customers receiving harmonisation caps	CH C	5,755,625	4,032,463	2,019,006	1,158,573						
operaning charge (Od) - customers receiving treatment caps onal	H2 CH	18.666.547	15.490.291	11.943.635	10.825.298	8 500 000	9 500 000	8 500 000	- 000 000 a	8 500 000	9 500 000
					000000						

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Projected Revenues

Primary Revenue for Water Services	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Tariff basket 1 - Household unmeasured water	шз	291.9	.9 302.2	308.7	317.9	320.8	323.8	334.9	346.4	358.3	370.9
Tariff basket 3 - 20mm metered water	£m	31			34.5			49.9		54.2	56.5
Tariff basket 5 - Other metered water	£m	78	78.2 72.1					71.0		73.9	75.4
Tariff basket 7 - Unmeasured non-household water	m3	19.1	17.7	17.7	17.7	17.3	17.3	5.7	5.8	0.9	6.2
Total primary income - water service	£m	421.0	.0 425.0	432.3	442.0	442.8	446.2	461.5	476.7	492.4	509.0
Primary Revenue for Wastewater Service	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Tariff basket 2 - Household unmeasured wastewater	£m	315.5	.5 326.4	333.1	343.1	346.5	349.9	362.0	374.6	387.6	401.4
Tariff basket 4 - 20 mm metered wastewater	£m	26	26.9 27.6	28.6	29.7	30.2	31.3	49.8	52.2	54.6	57.3
Tariff basket 6 - Other metered wastewater	£m	37						31.7		32.8	33.4
Tariff basket 8 - Unmeasured non-household wastewater	£m	26	26.2 24.2	24.2	24.2	23.7	23.7	8.9	7.0	7.2	7.4
Tariff basket 9 - Surface water drainage	£m	95.2	.2 90.6	92.2	93.8	93.4	95.0	98.9	103.1	107.3	111.8
Tariff basket 10 - Trade effluent	шз	23	23.6 24.9	25.7	26.2	26.7	26.1	26.1	26.0	26.0	26.0
Total primary income - wastewater service	£m	524.4		536.4	549.3	551.8	557.1	575.4	595.1	615.5	637.2
			H								
Percentage of primary revenue in each year - by tariff basket	Onits	2004-05	500	500	200	2008	200	2010-11	2011	2012-13	2013-14
Tariff basket 1 - Household unmeasured water	%	30.9%						32.3%		32.3%	32.4%
Tariff basket 2 - Household unmeasured wastewater	%	33.4%	% 34.3%	34.4%	34.6%	(,)	34.9%	34.9%	32.0%	32.0%	35.0%
Tariff basket 3 - 20mm metered water	%	3.4%	% 3.5%	3.5%	3.5%	3.5%	3.5%	4.8%	4.9%	4.9%	4.9%
Tariff basket 4 - 20 mm metered wastewater	%	2.8%		3.0%		3.0%	3.1%	4.8%	4.9%	4.9%	2.0%
Tariff basket 5 - Other metered water	%	8.3%	%9'.2 %	7.5%	7.2%		%6.9	%8.9	%8'9	%2'9	6.6%
Tariff basket 6 - Other metered wastewater	%	3.9%	% 3.4%	3.4%			3.1%	3.1%		3.0%	2.9%
Tariff basket 7 - Unmeasured non-household water	%	2.0%	1.9%	1.8%	1.8%	1.7%	1.7%	%9.0	0.5%	0.5%	0.5%
Tariff basket 8 - Unmeasured non-household wastewater	%	2.8%		2.5%	2.4%	2.4%		%2'0	%2'0	%9.0	0.6%
Tariff basket 9 - Surface water drainage	%	10.1%	% 9.5%	9.5%	9.5%	9.4%	9.5%	9.5%	%9.6	9.7%	9.8%
Tariff basket 10 - Trade effluent	%	2.5%	% 2.6%	2.7%	2.6%	2.7%	2.6%	2.5%	2.4%	2.3%	2.3%
Percentage of primary revenue in each year- household/non-household	Units	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Household	%	64.3%		%8.99		67.1%	67.2%	67.2%	%2.3%	67.3%	67.4%
Non-household	%	35.7%		33.7%	33.3%	32.9%	32.8%	32.8%	32.7%	32.7%	32.6%
Secondary Boyanua	Inite	2004-05	2005-06	2006-07	2007-08	2008-00	2000-10	2010-11	2011-12	2012-13	2013-14
		201	-11	70.007	200-100	2000-00	2003-10		71-117	2012-10	2010-14
Total secondary revenue	£m	12.1		13.9				15.3		16.1	16.5
Percentage increase	%		12.1%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
C T		10,000	+	10000	000		0,000		0,7	0,000	
lotal Revenue	Onits	2004-05	2005-06	Z009-07	2007-08	5008-03	01-6002	11-0102	21-1102	2012-13	2013-14
Total Revenue	£m	957.5	5 965.1	982.7	1,005.5	1,009.2	1,018.2	1,052.2	1.087.5	1.124.0	1,162.7

Water Industry Commissioner for Scotland Tariff Basket Model - Strategic Review of Charges 2006-10

Charge Limits

Notional setting year revenue	Onits	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Tariff basket 1 - Household unmeasured water	G	300,219,444	308,289,168	314,901,982	317,868,318	320,835,377	331,897,061	343,312,486	355,089,856
Tariff basket 2 - Household unmeasured wastewater	GI	324,203,631	332,949,945	339,793,556	343,147,608	346,501,206	358,600,649	371,089,314	383,977,494
Tariff basket 3 - 20mm metered water	બ	32,662,179	32,861,185	33,702,962	33,819,147	34,643,095	36,353,718	51,145,727	53,311,672
Tariff basket 4 - 20 mm metered wastewater	હ	27,596,672	27,629,847	28,621,127	29,099,998	30,179,912	32,041,322	51,038,448	53,477,358
Tariff basket 5 - Other metered water	3	77,062,231	72,148,446	72,193,346	70,316,679	69,962,263	71,354,277	72,778,445	74,235,551
Tariff basket 6 - Other metered wastewater	G	38,016,171	32,767,494	32,515,944	31,591,108	31,353,297	31,897,595	32,453,762	33,022,082
Tariff basket 7 - Unmeasured non-household water	G	19,017,290	17,714,466	17,714,466	17,342,462	17,342,462	17,776,024	5,847,970	5,994,170
Tariff basket 8 - Unmeasured non-household wastewater	сı	26,210,180	24,216,630	24,216,630	23,708,081	23,708,081	24,300,783	7,005,363	7,180,497
Tariff basket 9 - Surface water drainage	GI	97,843,415	90,607,823	92,205,741	91,833,782	93,398,144	97,336,568	101,413,540	105,633,525
Tariff basket 10 - Trade effluent	G	5,114,979	9,399,767	13,797,281	15,040,415	18,162,910	18,088,629	18,026,359	17,976,038
Notional charging year revenue	Units	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Tariff basket 1 - Household unmeasured water	G	306,223,833	314,454,952	314,901,982	317,868,318	328,856,261	340,194,487	351,895,299	364,322,192
Tariff basket 2 - Household unmeasured wastewater	GI	330,687,703	339,608,944	339,793,556	343,147,608	355,163,736	367,565,666	380,366,547	393,960,909
Tariff basket 3 - 20mm metered water	બ	32,662,179	32,861,185	32,995,199	33,819,147	35,509,172	37,262,561	52,424,370	54,697,775
Tariff basket 4 - 20 mm metered wastewater	GI	27,596,672	27,629,847	28,020,083	29,099,998	30,934,410	32,842,355	52,314,409	54,867,770
Tariff basket 5 - Other metered water	G	77,062,231	72,148,446	70,677,286	70,316,679	71,711,319	73,138,134	74,597,907	76,165,675
Tariff basket 6 - Other metered wastewater	GI	38,016,171	32,767,494	31,833,109	31,591,108	32,137,130	32,695,035	33,265,106	33,880,656
Tariff basket 7 - Unmeasured non-household water	બ	19,017,290	17,714,466	17,342,462	17,342,462	17,776,024	18,220,425	5,994,170	6,150,018
Tariff basket 8 - Unmeasured non-household wastewater	GI	26,210,180	24,216,630	23,708,081	23,708,081	24,300,783	24,908,302	7,180,497	7,367,190
Tariff basket 9 - Surface water drainage	GI	97,843,415	90,607,823	90,269,421	91,833,782	95,733,098	686,697,66	103,948,879	108,379,997
Tariff basket 10 - Trade effluent	G	5,114,979	9,399,767	13,507,538	15,040,415	18,616,983	18,540,844	18,477,018	18,443,415
Weighted average charge increases	Units	2006-07	2007-08	5008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Tariff basket 1 - Household unmeasured water	%	2.00%	2.00%	%00'0	%00.0	2.50%	2.50%	2.50%	2.60%
Tariff basket 2 - Household unmeasured wastewater	%	2.00%	2.00%	%00:0	%00.0	2.50%	2.50%	2.50%	2.60%
Tariff basket 3 - 20mm metered water	%	%00:0	%00:0	-5.10%	%00:0	2.50%	2.50%	5.50%	2.60%
Tariff basket 4 - 20 mm metered wastewater	%	%00'0	%00:0	-5.10%	%00.0	2.50%	2.50%	2.50%	2.60%
Tariff basket 5 - Other metered water	%	%00'0	%00:0	-5.10%	%00'0	2.50%	2.50%	5.50%	2.60%
Tariff basket 6 - Other metered wastewater	%	%00:0	%00:0	-5.10%	%00.0	2.50%	2.50%	2.50%	2.60%
Tariff basket 7 - Unmeasured non-household water	%	%00:0	%00:0	-5.10%	%00:0	2.50%	2.50%	5.50%	2.60%
Tariff basket 8 - Unmeasured non-household wastewater	%	%00:0	%00:0	-5.10%	%00:0	2.50%	2.50%	2.50%	2.60%
Tariff basket 9 - Surface water drainage	%	%00:0	%00:0	-5.10%	%00.0	2.50%	2.50%	2.50%	2.60%
Tariff basket 10 - Trade effluent	%	%00.0	%00.0	-2.10%	%00'0	2.50%	2.50%	2.50%	2.60%
Nominal Overall weighted average charge increase (weighting year: 2 years prior)	Units	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Nominal Overall weighted average charge increase	%	1.29%	1.32%	-0.71%	%00:0	2.50%	2.50%	2.50%	2.60%
Bas overal weinhted average charge increase (primary services)	Inite	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
The state of the s			2010	2000	200			200.00	
RP inflation	%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Heal overall weighted average charge increase (the "K" factor)	%	-1.21%	-1.18%	-3.21%	-2.50%	0.00%	0.00%	0.00%	0.10%

This appendix is divided into two parts:

Appendix 14 (A) Risks within management control

Appendix 14 (B) Risks outside management control

Appendix 14 (A) Risks within management control: summary of profiles

Table A1: Profile combinations (management controlled) considered in the risk analysis

Profile number	Risks considered	Dependency
M1	Total allowed operating costs only	Assumes no risk in delivering the mean investment programme
M2	Total allowed capital expenditure only	Assumes no risk in the level of operating costs incurred
M3	Total allowed capital expenditure and	
	total allowed operating costs	Dependent
M4	Total allowed capital expenditure and	
	total allowed operating costs	Independent

Appendix 14 (A) Risks within management control : summary of results

Management	controlled ri	sk profiles for	r cumulative new	debt

Chance of exceeding Draft Determination

	2006-07	2007-08	2008-09	2009-10
Draft Determination	£124.6m	£272.6m	£490.8m	£761.4m
Profile M1: Total allowed operating costs only				
	2006-07	2007-08	2008-09	2009-10
5% cumulative probability point	£94.1m	£202.2m	£368.5m	£577.8m
Mean	£99.5m	£212.9m	£391.6m	£618.3m
95% cumulative probability point	£104.9m	£223.7m	£414.5m	£658.5m
Chance of exceeding Draft Determination	0.0%	0.0%	0.0%	0.0%
Profile M2: Total allowed capital expenditure only				
Frome wiz. Total allowed capital expenditure only	0000 07	0007.00	0000 00	0000 40
	2006-07	2007-08	2008-09	2009-10
5% cumulative probability point	£69.2m	£140.9m	£273.2m	£449.1m
Mean	£99.5m	£213.0m	£391.6m	£618.3m
95% cumulative probability point	£129.7m	£285.0m	£510.0m	£787.4m

Profile M3: Total allowed capital expenditure and total allowed operating costs - dependent

8.6%

8.7%

8.4%

8.2%

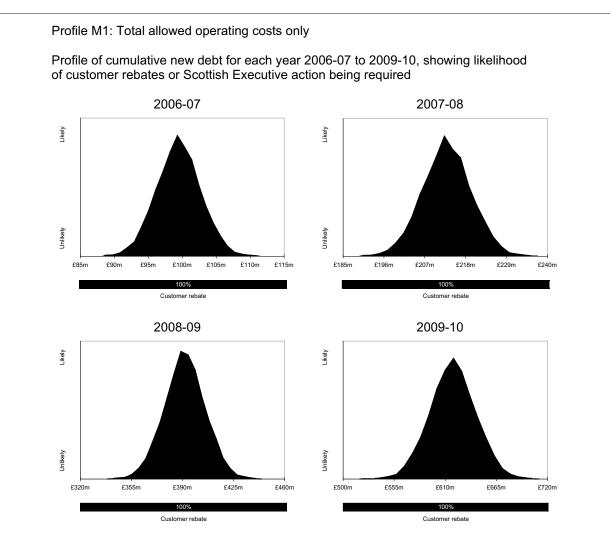
	2006-07	2007-08	2008-09	2009-10
5% cumulative probability point	£65.2m	£132.3m	£253.4m	£413.3m
Mean	£99.5m	£212.9m	£391.6m	£618.3m
95% cumulative probability point	£133.8m	£293.9m	£530.0m	£823.7m
Chance of exceeding Draft Determination	11.5%	11.3%	12.1%	12.7%

Profile M4: Total allowed capital expenditure and total allowed operating costs - independent

	2006-07	2007-08	2008-09	2009-10
5% cumulative probability point	£68.8m	£140.0m	£271.1m	£444.7m
Mean	£99.5m	£212.9m	£391.6m	£618.3m
95% cumulative probability point	£130.0m	£285.1m	£511.4m	£791.4m
Chance of exceeding Draft Determination	8.9%	9.0%	8.9%	8.8%

Appendix 14 Risk analysis

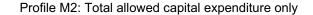
Appendix 14 (A) Risks within management control: profiles



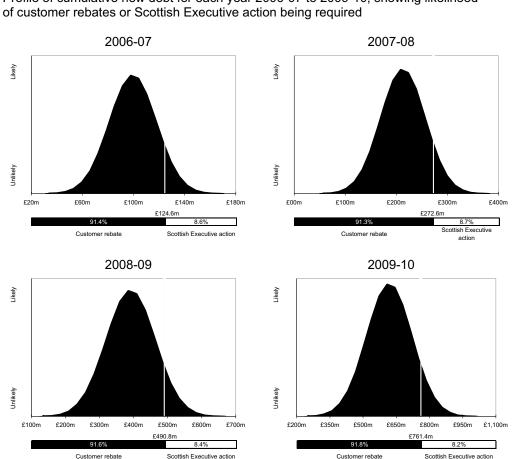
Profile M1 Outcome

The likelihood of Scottish Executive action being required is negligible in each year.

Appendix 14 (A) Risks within management control: profiles



Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood



Profile M2 Outcome

Customer rebate

The likelihood of Scottish Executive action being required is between 8% and 9% in each year.

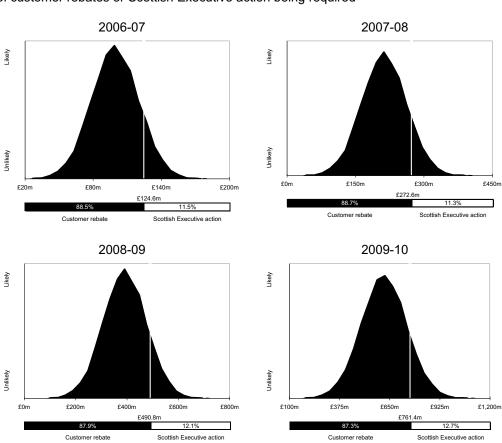
Scottish Executive action

Customer rebate

Appendix 14 (A) Risks within management control: profiles

Profile M3: Total allowed capital expenditure and total allowed operating costs - dependent

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates or Scottish Executive action being required



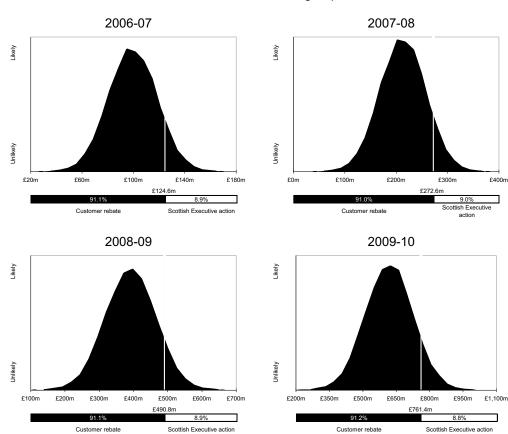
Profile M3 Outcome

The likelihood of Scottish Executive action being required is between 11% and 13% in each year.

Appendix 14 (A) Risks within management control: profiles

Profile M4: Total allowed capital expenditure and total allowed operating costs - independent

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates or Scottish Executive action being required



Profile M4 Outcome

The likelihood of Scottish Executive action being required is between 8% and 9% in each year.

Appendix 14 (B) Risks outside management control: summary of profiles

Table B1: Profile combinations (outside management control) considered in the risk analysis

Profile number	Investment programme profile	Risks considered	Dependency
E1	High	COPI	Assumes no risk in CPI or of exogenous shocks
E2	High	CPI	Assumes no risk in COPI or of exogenous shocks
E3	High	Exogenous shocks	Assumes no risk in CPI or COPI
E4	High	COPI and	Assumes no risk in CPI; independent
	J	exogenous shocks	•
E5	High	CPI and exogenous shocks	Assumes no risk in COPI; independent
E6	High	CPI and COPI	Assumes no risk in exogenous shocks; dependent
E7	High	CPI and COPI	Assumes no risk in exogenous shocks; independent
E8	High	COPI, CPI and	Dependent, exogenous shocks independent
	g	exogenous shocks	
E9	High	COPI, CPI and	Independent
	J	exogenous shocks	'
E10	Mean	COPI	Assumes no risk in CPI or of exogenous shocks
E11	Mean	CPI	Assumes no risk in COPI or of exogenous shocks
E12	Mean	Exogenous shocks	Assumes no risk in CPI or COPI
E13	Mean	COPI and exogenous	Assumes no risk in CPI; independent
		shocks	
E14	Mean	CPI and exogenous	Assumes no risk in COPI; independent
		shocks	
E15	Mean	CPI and COPI	Assumes no risk in exogenous shocks; dependent
E16	Mean	CPI and COPI	Assumes no risk in exogenous shocks; independent
E17	Mean	COPI, CPI and	COPI and CPI dependent,
		exogenous shocks	exogenous shocks independent
E18	Mean	COPI, CPI and	
		exogenous shocks	Independent

Appendix 14 (B) Risks outside management control: summary

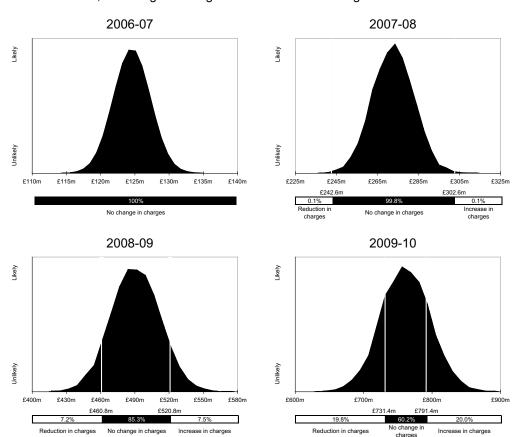
	2006-07	2007-08	2008-09	2009-10		
Draft Determination	£124.6m	£272.6m	£490.8m	£761.4m		
Upper assumed materiality limit	£154.6m	£302.6m	£520.8m	£791.4m		
	£134.6m	£302.6m	£460.8m	£731.4m		
Lower assumed materiality limit	194.0111	1242.0111	1400.0111	£/31.4III		
Profile E1: COPI, high investment programme						
Profile E1. COPI, flight investment programme	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	49.4%	50.0%	49.4%	49.6%		
Chance of upward IDOK	0.0%	0.1%	7.5%	20.0%		
Chance of upward IDOK	0.0%	0.1%	7.5%	20.0%		
Profile E2: CPI, high investment programme						
1 Tome L2. Of I, mgn investment programme	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	0.2%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0%	0.0%	0.0%	0.0%		
Grance of upward IDOR	0.070	0.070	0.070	0.070		
Profile E3: Exogenous shocks, high investment p	rogramme					
The second control of the second control of	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	21.3%	30.2%	38.1%		
Chance of upward IDOK	11.3%	21.3%	30.2%	38.1%		
	, ,	,	00.270	001170		
Profile E4: COPI and exogenous shocks, high inv	estment prod	ıramme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	55.2%	60.9%	64.9%	68.5%		
Chance of upward IDOK	11.3%	21.2%	34.8%	48.6%		
Profile E5: CPI and exogenous shocks, high inve	stment progra	amme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.5%	21.4%	29.9%	37.7%		
Chance of upward IDOK	11.2%	21.0%	28.8%	35.4%		
•						
Profile E6: CPI and COPI - dependent, high inves	tment progra	mme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	29.0%	36.2%	34.8%	33.3%		
Chance of upward IDOK	0.0%	0.1%	4.4%	11.4%		
Profile E7: CPI and COPI - independent, high investment programme						
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	25.3%	34.4%	32.7%	31.4%		
Chance of upward IDOK	0.0%	0.0%	3.6%	9.7%		
Profile E8: COPI, CPI and exogenous shocks - de	pendent, hig	h investmen	t programn	ne		
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	37.2%	49.7%	54.1%	57.4%		
Chance of upward IDOK	11.2%	20.6%	31.2%	40.7%		

Profile E9: COPI, CPI and exogenous shocks - inc		_				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	33.9%	48.8%	53.0%	56.4%		
Chance of upward IDOK	11.2%	20.7%	30.7%	40.7%		
Desfile E40. CODI massa investment and annual						
Profile E10: COPI, mean investment programme	0000 07	0007.00	0000 00	0000 40		
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	0.0%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0%	0.0%	0.0%	0.0%		
Profile E11: CPI, mean investment programme						
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	0.0%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0 /0	0.0 /6	0.0 /6	0.0 /6		
Profile E12: Exogenous shocks, mean investmen	t programme	•				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	18.5%	21.5%	21.3%		
Chance of upward IDOK	10.0%	15.4%	17.2%	16.6%		
Chance of apward 18 of C	10.070	10.170	17.270	10.070		
Profile E13: COPI and exogenous shocks, mean i	investment p	rogramme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	18.7%	21.6%	21.1%		
Chance of upward IDOK	9.8%	15.5%	17.3%	15.8%		
	0.070	. 0.0 70		101070		
Profile E14: CPI and exogenous shocks, mean in	vestment pro	gramme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	18.1%	20.0%	17.9%		
Chance of upward IDOK	9.7%	15.1%	15.6%	12.6%		
Profile E15: CPI and COPI - dependent, mean inv	estment prog	Jramme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	0.0%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0%	0.0%	0.0%	0.0%		
Profile E16: CPI and COPI - independent, mean in	nvestment pr	ogramme				
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	0.0%	0.0%	0.0%	0.0%		
Chance of upward IDOK	0.0%	0.0%	0.0%	0.0%		
·						
Profile E17: COPI, CPI and exogenous shocks - dependent, mean investment programme						
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	18.3%	20.4%	18.1%		
Chance of upward IDOK	9.9%	15.2%	15.9%	12.8%		
Profile E18: COPI, CPI and exogenous shocks - in	ndependent,	mean invest	tment prog	ramme		
	2006-07	2007-08	2008-09	2009-10		
Chance of exceeding Draft Determination	11.3%	17.9%	19.9%	17.4%		
Chance of upward IDOK	9.8%	14.7%	15.5%	12.5%		

Appendix 14 (B) Risks outside management control: profiles

Profile E1: COPI, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges

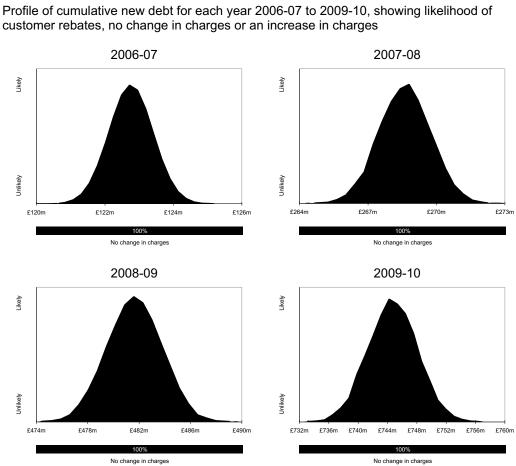


E1 Outcome

The likelihood of an interim determination that increases charges is negligible in 2006-07 and 2007-08, and rises to 20% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E2: CPI, high investment programme



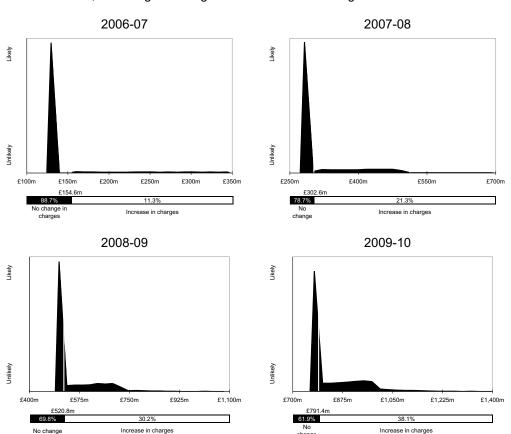
E2 Outcome

There is a negligible risk of an interim determination in each year.

Appendix 14 (B) Risks outside management control: profiles

Profile E3: Exogenous shocks, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges

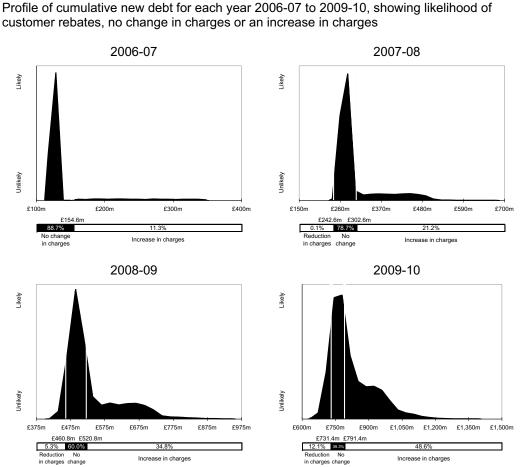


E3 Outcome

The likelihood of an interim determination that increases charges rises from 11% in 2006-07 to 38% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E4: COPI and exogenous shocks, high investment programme



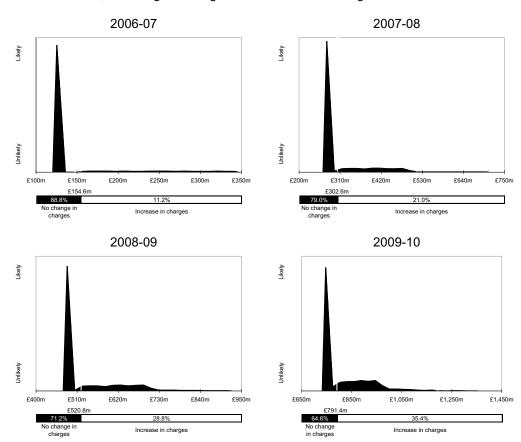
E4 Outcome

The likelihood of an interim determination that increases charges rises from 11% in 2006-07 to 49% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E5: CPI and exogenous shocks, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



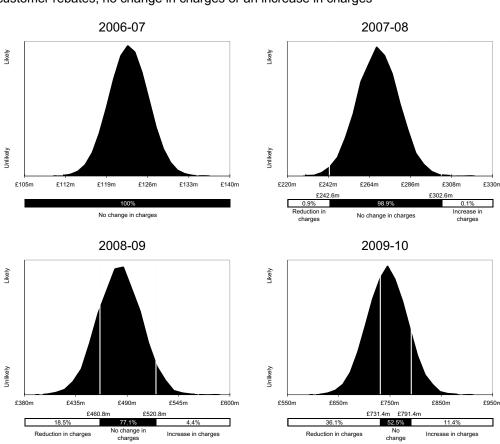
E5 Outcome

The likelihood of an interim determination that increases charges rises from 11% in 2006-07 to 35% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E6: CPI and COPI – dependent, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



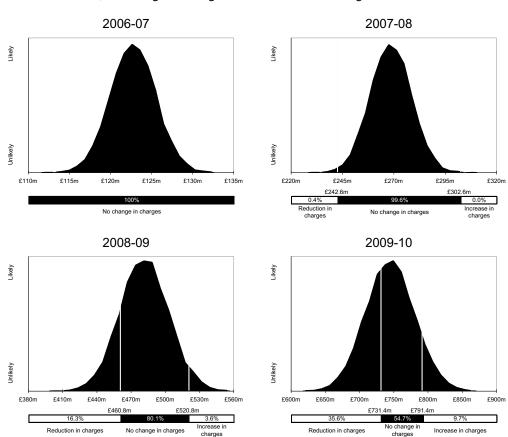
E6 Outcome

The likelihood of an interim determination that increases charges is negligible in 2006-07 and 2007-08, but rises to 11% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E7: CPI and COPI - independent, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



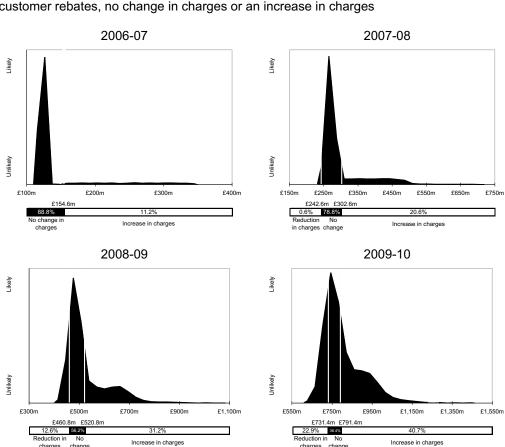
E7 Outcome

The likelihood of an interim determination that increases charges is negligible in 2006-07 and 2007-08, but rises to 10% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E8: COPI, CPI and exogenous shocks – COPI and CPI dependent, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



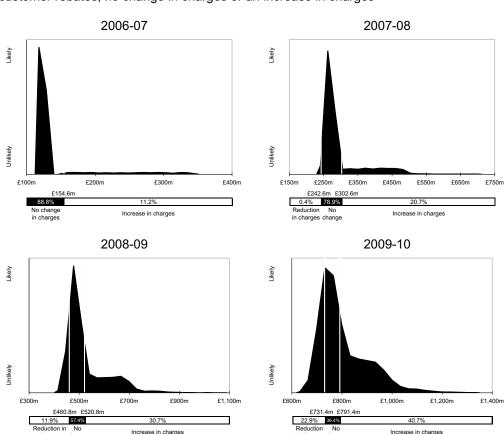
E8 Outcome

The likelihood of an interim determination that increases charges rises from 11% in 2006-07 to 41% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E9: COPI, CPI and exogenous shocks – independent, high investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



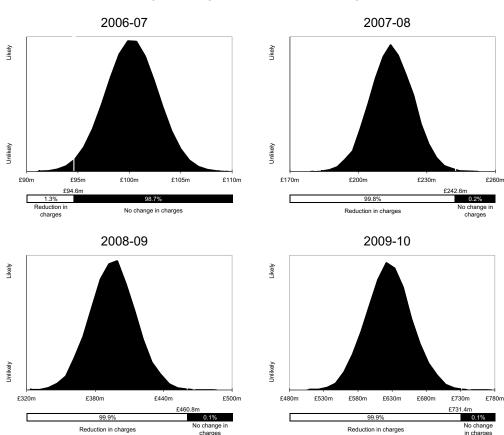
E9 Outcome

The likelihood of an interim determination that increases charges rises from 11% in 2006-07 to 41% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E10: COPI, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



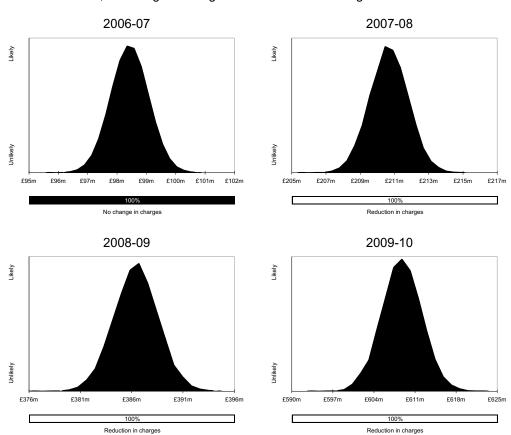
E10 Outcome

The likelihood of an interim determination that increases charges is negligible in each year.

Appendix 14 (B) Risks outside management control: profiles

Profile E11: CPI, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



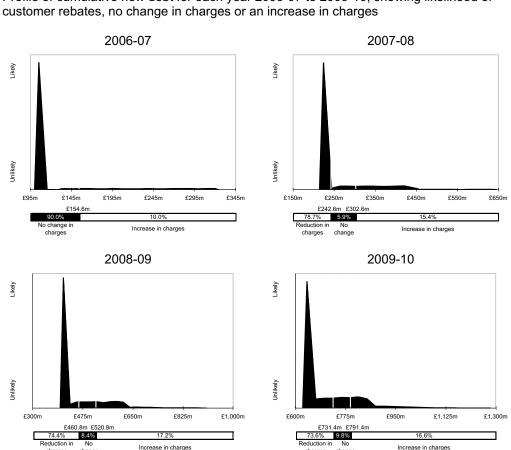
E11 Outcome

The likelihood of an interim determination that increases charges is negligible in each year.

Appendix 14 (B) Risks outside management control: profiles

Profile E12: Exogenous shocks, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of



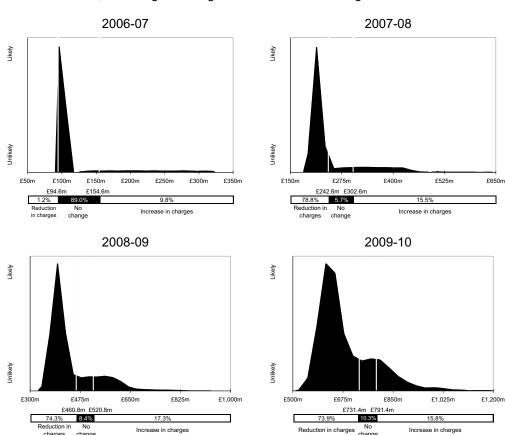
E12 Outcome

The likelihood of an interim determination that increases charges rises from 10% in 2006-07 to 17% by 2009-10.

Appendix 14 (B) Risks outside management control: profiles

Profile E13: COPI and exogenous shocks, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



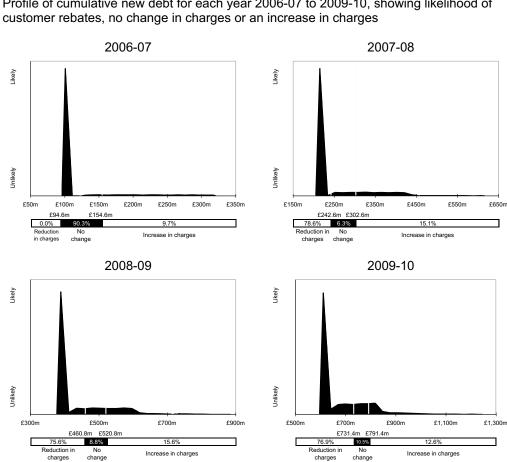
E13 Outcome

The likelihood of an interim determination that increases charges rises from 10% in 2006-07 to between 15% and 18% from 2007-08.

Appendix 14 (B) Risks outside management control: profiles

Profile E14: CPI and exogenous shocks, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of



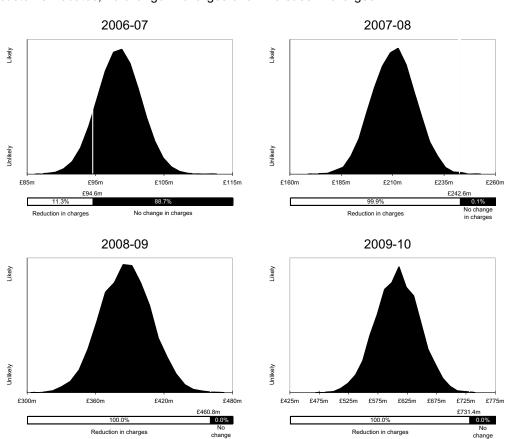
E14 Outcome

The likelihood of an interim determination that increases charges rises from 10% in 2006-07 to between 12% and 16% from 2007-08.

Appendix 14 (B) Risks outside management control: profiles

Profile E15: CPI and COPI – dependent, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



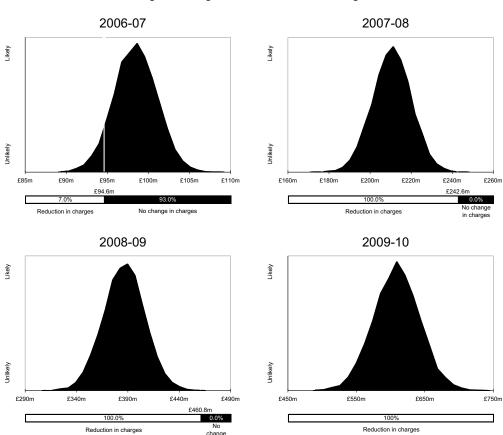
E15 Outcome

The likelihood of an interim determination that increases charges is negligible in each year.

Appendix 14 (B) Risks outside management control: profiles

Profile E16: CPI and COPI - independent, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



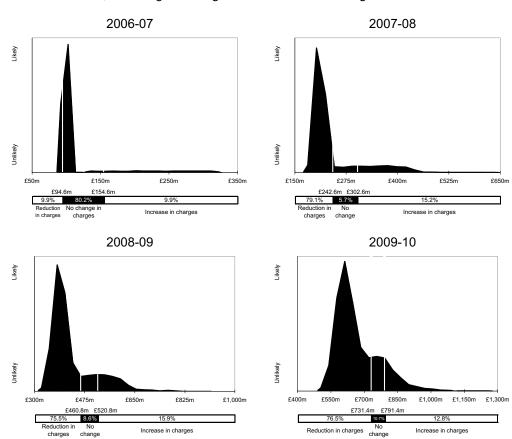
E16 Outcome

The likelihood of an interim determination that increases charges is negligible in each year.

Appendix 14 (B) Risks outside management control: profiles

Profile E17: COPI, CPI and exogenous shocks – COPI and CPI dependent, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



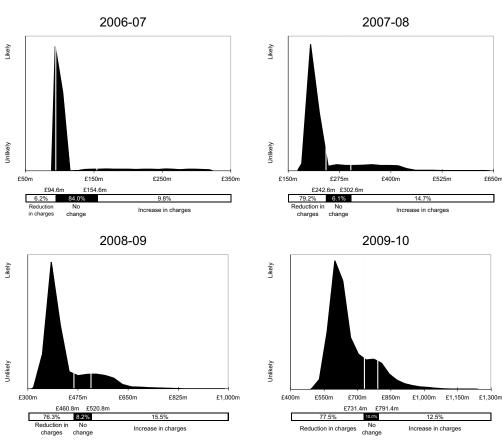
E17 Outcome

The likelihood of an interim determination that increases charges rises from 10% in 2006-07 to between 12% and 16% from 2007-08.

Appendix 14 (B) Risks outside management control: profiles

Profile E18: COPI, CPI and exogenous shocks – independent, mean investment programme

Profile of cumulative new debt for each year 2006-07 to 2009-10, showing likelihood of customer rebates, no change in charges or an increase in charges



E18 Outcome

The likelihood of an interim determination that increases charges rises from 10% in 2006-07 to between 12% and 16% from 2007-08.

Guidance on investment priorities, statement by the Scottish Executive

INVESTING IN WATER SERVICES: OBJECTIVES FOR 2006-2014 THE STATEMENT BY THE SCOTTISH EXECUTIVE

INTRODUCTION

- On 26 May 2004, the Minister for Environment and Rural Development, Ross Finnie MSP, wrote to the Water Industry Commissioner setting out the arrangements for the next Strategic Review of Charges (SRC). In undertaking the SRC, the Water Industry Commission will determine the level of charges required to fund the water industry in Scotland for the period 2006-2010, taking account of the objectives set by Ministers for Scottish Water, and the principles by which Ministers will require water charges to be levied upon Scottish Water customers.
- This Annex provides detail in support of the forthcoming Ministers statement in Parliament by the Deputy Minister for Environment and Rural Development, Lewis Macdonald MSP, as regards the objectives that Scottish Water will be required to meet in the period 2006-2014. In accordance with the process set out on 26th May, Ministers require that Scottish Water set out how it plans to meet these objectives in a second draft Business Plan. Subject to enactment of the Water Services etc. (Scotland) Bill, the Executive will confirm that this annex is a direction to Scottish Water under sections 56 and 56A of the Water Industry (Scotland) Act 2002, as amended by section 19 of the Bill.
- 3 The formulation of Ministers' objectives has drawn upon advice on the investment requirements identified by the Quality and Standards 3 Board¹, the responses made to 2 formal public consultations on water services in Scotland², Scottish Water's Initial Strategic Business Plan, and the findings of detailed customer research³ conducted on behalf of Ministers.
- In his open letter of 2 December 2004, the Water Industry Commissioner reported his confidence that Scottish Water could be required to undertake a substantial programme of investment with average prices rising at a rate of no more than inflation in that period.
- 5 In setting sustainable objectives for the water industry, Ministers intend to:
 - achieve the maximum affordable improvement in public health and standards of environmental protection;
 - support housing and economic growth in communities across Scotland through investment in new water and sewage capacity;
 - achieve these outcomes while taking prudent steps to ensure that water charges remain stable and Scottish Water's capital programme is of a scale that can be delivered efficiently in the interests of all water customers.

1

¹ The Quality and Standards 3 Board was a stakeholder group set up to advise Ministers of the investment requirements of the water industry in Scotland. Stakeholders included: the industry's regulators – the Scottish Environment Protection Agency (SEPA), the Drinking Water Quality Regulator (DWQR), the Water Industry Commissioner (WIC), and Water Customer Consultation Panels; and other stakeholders - CBI, COSLA, Scottish Consumer Council, Homes for Scotland, Scottish Federation of Housing Associations, Communities Scotland and Scottish Natural Heritage. Published reports are available at www.scotland.gov.uk/

² Investing in Water Services 2006-2014 and Paying for Water Services 2006-2010

The Scottish Executive (2005), Investing in Water Services 2006-2014: Research into Customer Views

- In formulating objectives for investment, Ministers have considered Scottish Water's statutory duty to have regard to sustainable development. They recognise how Scottish Water's activities touch on every aspect of sustainable development and that further investment can secure improvements across a range of issues improvements in drinking water quality, a better quality water environment, reductions in malodour problems from treatment works and provision to meet the infrastructural requirements for new developments. In considering these issues, Ministers have sought to reconcile the many competing investment requirements while at the same time ensuring that charges are stable, fair and affordable. Scottish Water's duty is to deliver investment in accordance with Section 51 of the Water Industry (Scotland) Act 2002.
- Ministers have decided that the objectives of the investment programme should be set out over an eight year period. This will allow Scottish Water to plan ahead and to improve the prospects for efficient delivery of its objectives. The present Strategic Review of Charges covers a four year period, and the financial requirements for the period 2010-2014 will be considered in a subsequent Review. In order to allow the Water Industry Commission and Scottish Water to estimate the quantity of investment that must be financed and delivered in 2006-2010, Ministers have therefore separately specified investment outputs that must be delivered by 2010 and 2014.
- In addition to setting objectives for capital investment, Ministers have established principles by which Scottish Water's customers should pay for their services in the period 2006-2010, and signalled further developments in their approach to charges for the period 2010 onwards. These are set out in a separate annex.

Investment Objectives: Essential and Desirable Improvements

In setting objectives for investment, Ministers require that Scottish Water be funded by means of the Strategic Review of Charges to deliver all of the following *essential* investment objectives to the extent that they fall due within the period of the 2006-2010 Review:

Table 1: Essential Investment objectives for Scottish Water 2006-2014

Issue	Objective
Capital Maintenance	Maintain service standards for customers to levels forecast for March 2006
Improving the Environment	Contribute to the improvement in the quality of water in 530 km of water bodies
Improving Drinking Water	Improve drinking water quality for 1.5 million people across Scotland
Development Constraints	Provide sufficient strategic capacity to meet the requirements of all estimated new development
Tackling Malodour at wastewater treatment works	Minimise odour nuisance at 35 wastewater treatment works.
Addressing Sewer Flooding	Remove a net 1,140 properties at risk from internal sewer flooding

Ministers also recognise the further benefits that would be obtained by setting more ambitious goals for investment over the period until 2014. Accordingly they have established a further series of *desirable* objectives in the following order of priority by 2014:

- To increase the total length of water bodies improved to 590 km;
- To accelerate the removal of lead communication pipes and improvements in the management of a further 11 water resource zones;
- To further improve the total length of water bodies improved to 1,270 km;
- To improve the water pressure provided to 5,625 properties; and
- To secure a net reduction of 850 in the number of properties affected by unplanned interruptions of non trunk mains, lasting longer than 12 hours,
- 11 Ministers require that the Water Industry Commission makes provision in the Strategic Review 2006-2010 for these desirable objectives in order of priority to the extent that:
 - it is reasonable to expect that they can be delivered efficiently;
 - and without projected charges to customers in the period to 2010 rising by more than levels of inflation.

CAPITAL MAINTENANCE

- 12 The extent to which Scottish Water's existing network of pipes, treatment works and other assets are properly maintained affects the standards of service which Scottish Water customers receive. For this reason, Ministers believe that (over the period 2006-2014), it is essential that service standards for customers across Scotland should, *at a minimum*, be maintained at those levels that have been achieved as a result of the Quality and Standards 2 investment programme.
- In its advice to the Executive, the Quality and Standards 3 Board noted that there are a number of different approaches for establishing the appropriate level of investment required to maintain the existing infrastructure. The *Common Framework Approach* is considered to be the water industry's best practice approach and the Board recommended the application of a subset of OFWAT measures for this investment programme. This methodology measures the impact of capital maintenance spend upon asset performance as measured by a suite of customer focussed serviceability measures. These annually measured indicators are outlined in the table which appears below.

Table 2: Capital Maintenance Serviceability Indicators 2006-2014

Serviceability indicators	National Base Position 2006 – 2014 (Annually Measured)
Water Serviceability Indicator	
% Compliant Zones for Iron	83*
% Compliant Zones for Manganese	94*
No of microbiological (total coliform) failures at water treatment works	90*
Number of properties on the low pressure register	12,957*
Properties with unplanned interruptions to supply > 12 hours	16,184*
Number of burst per 1,000km of mains	204*
Wastewater Serviceability Indicator	
Number of properties at risk of internal flooding ⁴	1,603*
Number of properties internally flooded due to other causes	366
Number of failing wastewater treatment works ⁵ (capital maintenance)	45*
Number of unsatisfactory intermittent discharges	867*
Number of pollution incidents ⁶	555*
Management & General	
Fleet, Scientific, Property, IT, Telemetry	Maintain to standards to be secured by Q&S 2
Health & Safety Compliance	Secure compliance with all existing and known new legislation
Asset Data	Enhance SW data to a sufficient level to support the operation of the common framework approach and other aspects of the investment programme

^{*} These Serviceability Indicators will show an improvement over the period 2006-2014, derived from drinking water quality, environment, growth or customer enhancement programmes

14 Enhancements to the above service standards will be secured through additional water quality, environmental and other investment in improving services that also form part of the Ministers' objectives. In putting forward detailed plans for the delivery of their objectives, Ministers expect Scottish Water to quantify enhancement in service standards derived from other aspects of the programme, and thereby to establish in conjunction with the Water Industry Commission, biennial targets of asset performance throughout the period on the basis of the above types of measure.

⁶ Baseline subject to clarification by SEPA.

4

⁴ The number of properties at risk of flooding at least once in ten years

⁵ Based on the Control of Pollution Act- look up table compliance (see http://www.sepa.org.uk/guidance/water/index.htm).

ENVIRONMENT

Improvements to the environment are governed by a range of EC Directives. Within the time span of this investment programme (2006-2014), objectives for most of these Directives will be drawn together under the umbrella of Water Framework Directive compliance. The essential investment described below is aimed at improving our level of compliance with these Directives, while the desirable investment will further reduce the risk of non-compliance by extending the work undertaken.

Statutory requirements and compliance dates

- In putting forward plans for investment, Ministers recognise that Scottish Water is a key instrument through which desired environmental improvements may be realised. Ministers require that Scottish Water should take account of the following statutory requirements and key compliance dates:
 - Water Framework Directive: Natura 2000 sites (2012), actions under the 1st River Basin Plan (2009)⁷; Controls (2012); Meeting environmental objectives (2015)
 - Urban Waste Water Treatment Directive: (ongoing)
 - Shellfish Waters Directive: (ongoing)
 - Bathing Waters Directive: (ongoing)
 - Integrated Pollution Prevention and Control Directive: (2007)
 - Landfill Directive: (ongoing)
 - Freshwater for Fish Directive: (ongoing)
 - Dangerous Substances Directive: (ongoing)
- The following sets out the investment objectives Scottish Water is expected to meet. These include an essential investment objective and 2 further desirable objectives which will only be included in a final investment programme if they are found to be deliverable efficiently and within a stable prices regime
- The Quality and Standards Board has described possible improvements to water bodies, based upon an assessment of the environmental improvement resulting from investment in Scottish Water assets and taking into account measures required from other potential sources of pollution to the water environment. Ministers require that in making plans to deliver improvements in the water environment, these should be set out in accordance with the relevant details established in the environmental legislation report to the Scottish Executive by the Quality and Standards 3 Project Board⁸.
- Ministers believe that it is *essential* to improve 530 kilometres⁹ of water bodies to meet the environmental objectives of a range of European and domestic legislation across Scotland. In accordance with this essential requirement, Ministers have decided that during the period 2006-2010 the following improvements must be made:

⁷ Drawn up on the basis of the best current understanding of the likely content of River Basin Plans.

Scottish Executive (2005), Investing in Water Services 2006-2014: Environmental Legislation Report - A Report to the Scottish Executive by the Quality and Standards 3 Project Board.

⁹ This figure represents the actual length of water body improved. As each water body may be improved for more than one environmental objective e.g. reductions in nutrient discharges in a reach may also be accompanied by improvements in bacterial quality to meet shellfish standards, the sum of the length improvements listed for the specific objectives will exceed the actual figure given here.

The Quality of the Water Environment

- Reduce the bacterial load from Scottish Water discharges in 64 km of designated bathing waters which are at risk of failing the mandatory standards of the current Bathing Waters Directive;
- Improve capacity at 18 unsatisfactory sewage works to comply with existing consent conditions under the Water Environment & Water Services Act 2003;
- Protect 17 km of waters designated as important UK sites for the Habitats and Bird Directives;
- Improve the quality of discharges to 50 km of designated waters in line with the environmental standards of the Freshwater Fish Directive;
- Reduce nutrients in sewage discharges affecting 39 km of waters to meet Urban Waste Water Treatment Directive requirements;
- Improve 23 km of surface waters by reducing discharges of oils and other chemicals from contaminated surface water drains to meet the requirements of the Dangerous Substances and Water Framework Directives;
- Improve the quality of discharges that affect 18 km of designated shellfish harvesting and production areas to meet the guideline standard;
- Improve both water and aesthetic quality of 83 km of surface waters currently
 affected by sewage and debris discharges from sewer networks to meet Urban Waste
 Water Treatment Directive requirements.
- 20 Ministers recognise the need to reuse and where appropriate, dispose of the byproducts of water and waste water treatment, and have decided that the following specific objectives are essential to those aims.

Waste Management

- Deliver management and monitoring systems at 16 landfill sites, 10 sludge treatment centres and 35 water treatment works to comply with PPC regulations;
- Deliver the requirements of the Landfill Directive to contain, monitor and decommission 9 landfill sites currently operated by Scottish Water.
- 21 In further accordance with this essential requirement, Ministers have decided that during the period 2010-2014 the following improvements in water quality should be made:

The Quality of the Water Environment

- Improve the quality of discharges that affect a further 5 km of waters designated as important UK sites for the Habitats and Bird Directives;
- Improve the quality of discharges to a further 56 km of designated waters in line with the environmental standards required under the Freshwater Fish Waters Directive;
- Reduce nutrients in sewage discharges to another 278 km to meet Urban Waste Water Treatment Directive requirements;
- Improve a further 25 km of surface waters by reducing discharges of oils and other chemicals from contaminated surface water drains to meet the requirements of the Dangerous Substances and Water Framework Directives;
- Improve discharges to 2 km of designated Shellfish harvesting and production areas to meet the guideline standard;
- Improve both water and aesthetic quality of a further 58 km of surface waters currently affected by sewage and debris discharges from sewer networks to meet Urban Waste Water Treatment Directive requirements.

Management of waste products associated with drinking water and sewage treatment

- Improve sludge management facilities to meet the requirements of the Safe Sludge Matrix at five sludge treatment centres
- Develop a GIS system to manage data on the location and status of redundant asbestos water main pipelines;
- Beyond the above essential works, Ministers also believe that it would be *desirable* in the first instance to improve an additional 60 km of water bodies across Scotland over the period 2010-14 (totalling to 590 km). In addition to the essential works, Ministers would wish to see over the period 2010-14:
 - Improve the aesthetic and water quality of a further 60km of surface waters downgraded by sewage and debris discharges from sewer networks to meet the requirements of the Urban Waste Water Treatment Directive;
 - reduce nutrients in sewage discharges affecting an additional 17 km to meet the requirements of the Urban Waste Water Treatment Directive;

- Finally, subject to the order of priorities indicated at paragraph 10, Ministers believe that it would be *desirable* to improve an additional 680 km of water bodies across Scotland (totalling to 1,270 km).
- During the period 2006-2010 Ministers would wish to:
 - Reduce nutrient levels in sewage discharges affecting a further 12 km of waters to meet the requirements of the Urban Waste Water Treatment Directive;
 - improve the aesthetic and water quality of a further 48 km of surface waters downgraded by sewage and debris discharged from sewer networks to meet the requirements of the Urban Waste Water Treatment Directive;
- During the period 2010-2014 Ministers would wish to:
 - Reduce nutrient levels in sewage discharges affecting a further 630 km of waters to meet the requirements of the Urban Waste Water Treatment Directive;
 - Improve the quality of discharges to a further 12 km of designated waters in line with the environmental standards of the Freshwater Fish Waters Directive.

DRINKING WATER AND WATER RESOURCES

- The improvement of drinking water and water resources is governed by the EC Drinking Water and Water Framework Directives. The essential investment described below is aimed at securing compliance with these Directives, while the desirable investment will reduce the risk of non-compliance by accelerating delivery of compliance with the lead standard set in the Drinking Water Directive and with the abstraction and impoundment control requirements set in the Water Framework Directive.
- 27 In establishing objectives for improvement of the water environment, Ministers have taken into account the statutory requirements as follows:
 - Drinking Water Directive: most parameters by (2003) except Trihalomethanes (2008) and Lead (2013)
 - Water Framework Directive: Natura 2000 sites (2012) and Controls (2012)
- 28 Ministers require that in making plans to deliver improvements in drinking water quality, these should be set out in accordance with the relevant details established in the report on drinking water quality and water resources to the Scottish Executive by the Quality and Standards 3 Project Board¹⁰.
- Ministers believe that it is *essential* that improvements are made to improve drinking water quality for 1.5m people across Scotland. In accordance with this essential requirement, Ministers consider that during the period 2006-2010 the following improvements must be made:

¹⁰ Scottish Executive (2005), Investing in Water Services 2006-2014: Drinking Water Quality and Water Resources - A Report to the Scottish Executive by the Quality and Standards 3 Project Board.

Drinking Water Quality

- Comply with the Cryptosporidium (Scottish Water) Directions 2003 and upgrade water supplies serving 1.5 million people to minimise the risk of non-compliance with the standard set in the Water Supply (Water Quality) (Scotland) Regulations 2001 for trihalomethanes and all other regulatory parameters (except lead which is addressed during the period 2010-2014).
- Improve disinfection control on water supplies serving 4 million people to improve taste and odour and reduce customer water quality complaints.
- Replace 35,000 lead communication pipes as the result of customer driven requests

The Management of Water Resources

- Reduce abstraction and provide increased compensation flows at all drinking water sources in 78 water resource zones. This will include all sources potentially affecting Natura 2000 designated sites.
- Support SEPA in determining the protection measures required for 574 drinking water sources.
- Provide flow metering and recording at 574 drinking water sources.
- Carry out 20 flood studies on reservoirs following statutory dam inspections and undertake remedial works as necessary.

Water Quality Protection

- Install backflow prevention devices at 235 waste water treatment works to ensure that these works comply with the water byelaws.
- Comply with incident report recommendations and reduce risk of contamination of water supplies by removing 5,500 cross connections.
- Develop WHO water safety plans for public drinking water supplies covering 50% of the population

Security of Supply

- Provide for increased physical security to agreed Security Service standards and improved provision in the event of an emergency. Details to be provided separately
- In further accordance with requirement, Ministers believe that during the period 2010-2014, the following improvements must be made:

Drinking Water Quality

- Install and optimise plumb solvency control to water supplies serving 500,000 people to meet tighter standard for lead in drinking water and replace 130,000 lead communication pipes.
- Install treatment for 178 properties currently served by raw water aqueducts to minimise risk of non-compliance with European Drinking Water Directive.

- Rehabilitation of water mains serving 750,000 people to minimise the risk of water quality being degraded by the condition of the mains.
- Replace a further 35,000 lead communication pipes as the result of customer driven requests

Water Quality Protection

- Install backflow prevention devices at 235 waste water treatment works to ensure that these works comply with the water byelaws.
- Comply with incident report recommendations and reduce risk of contamination of water supplies by removing 5,500 cross connections.
- Develop WHO water safety plans for public drinking water supplies covering the remaining 50% of the population

Security of Supply

 Provide for increased physical security to agreed Security Service standards and improved provision in the event of an emergency. Details to be provided separately

The Management of Water Resources

- Reduce abstraction and provide increased compensation flows at all drinking water sources in 26 water resource zones.
- Construct fish passes and provide freshet flows at 27 sites currently causing obstruction to the movement of migratory fish
- Carry out restoration works at 85 abandoned engineering works as determined by the Water Framework Directive.
- Carry out 20 flood studies and undertake remedial works as necessary.
- Beyond the essential works described above, Ministers also believe that it would also be *desirable* to undertake measures designed to accelerate the removal of lead communication pipes and improvements in the management of 11 water resources zones. In accordance with this aim, and in accordance with the priorities set at paragraph 10, in the period 2010-14 Ministers wish the delivery of the following improvements:

Water Quality

• Replace an additional 90,000 lead communication pipes.

The Management of Water Resources

 Reduce abstraction and provide increased compensation flows to meet Water Framework Directive standards at all drinking water sources in a further 11 water resource zones.

STRATEGIC CAPACITY FOR NEW DEVELOPMENT

- Including provision for additional capacity within the public network is important if communities are to be allowed to grow through new housing and commercial developments. Whilst capacity already exists within the public networks, decisions to build new development can give rise to a requirement for additional investment. Historically, Scottish Water has been expected to fund all the infrastructure requirements arising from new development. However, Ministers wish to bring forward arrangements whereby Scottish Water will be responsible for the removal of constraints caused by lack of capacity at a strategic level¹¹. Where a particular development requires additional local capacity which is not being addressed by other areas of the programme, Ministers intend that the cost of providing this should be met by the developer. Ministers will bring forward new regulations under the Water Environment and Water Services Act 2003 to bring this about.
- In establishing these new arrangements, Ministers expect significant improvement in the planning and delivery of new strategic capacity in the public system. The combination of more secure funding and better asset information secured through Scottish Water's current investment will allow Scottish Water to develop a more proactive engagement with local authorities to ensure that water and drainage capacity issues are properly integrated into the planning process. A further element offering improvements is the conclusion of the work between SEPA and Scottish Water to develop a *Memorandum of Understanding on the Impact of Proposed Development on the Public System*. This document seeks to establish clearer lines of communication between Scottish Water and SEPA to ensure that Scottish Water's arrangements for identifying assets at risk of overload and SEPA's approach to identifying watercourses at risk of environmental degradation are integrated to maximise the available capacity for new development across the country. This Memorandum of Understanding should be operational across Scotland by March 2006.
- Taking these matters into account, Ministers consider it *essential* to provide sufficient 'strategic capacity'¹² to meet all estimated new housing developments and the domestic requirements of commercial and industrial developments. Estimates of the scale of new development have been calculated drawing upon analysis of Scottish Executive Housing Trends data and an assessment of likely development anticipated by local authorities. This analysis estimates a need to allow for an additional 120,000 new homes and 4,050 hectares of new commercial land over the SRC period. The Executive will review these estimates in light of any new or improved data that emerges subsequent to the review. If this results in the estimates being revised, the Executive will restate this objective in terms of the revised estimate. It will notify the Commission and Scottish Water of the restated objective, so that, for their respective functions, they can consider whether the restatement requires the Commission to conduct a review of its determination.
- 35 Ministers consider that during the period 2006-2010 the following measures must be taken:
 - From April 2006, Scottish Water should publish annually a document outlining their strategic network capacity and development plans. The format of this document is to

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¹¹ Strategic capacity or part iv assets refer to Scottish Water's "Primary Assets"; Raw Water Intakes, Water Impounding Reservoirs, Water Aqueducts, Water Pumping Stations, Water Treatment Works, Wastewater Treatment Works.
¹² ibid.

be agreed with the Water Industry Commission. The report should be updated on an annual basis thereafter.

- Plans should be established to deliver 'strategic' capacity¹³ to allow 60,000 new homes¹⁴ and 2,025 hectares of new commercial land to be connected to the public water & wastewater network. This will require the provision of 'strategic' capacity for an additional 40,000 population equivalents (PE) at a number of wastewater treatment works and provide 'strategic' capacity for an additional 16,500 PE at a number of water treatment works15
- In formulating investment plans for this area of investment, Scottish Water and the 36 Water Industry Commission should take account of: General Register Office for Scotland's population projections; Scottish Executive's household projections; and the SEPA/SW Memorandum of Understanding on the Impact of Proposed Development on the Public System (forthcoming).
- Ministers also require that delivery of these investment requirements should be informed by the quality investment programme, the spatial priorities identified in the National Planning Framework, and development priorities identified by local authorities in their Structure and Local Plans.
- In further accordance with this essential objective, during the period 2010-2014, Ministers require that:
 - Scottish Water continue to publish annually a document outlining network capacity and development plans to invest in strategic capacity: the format of this document is to be agreed with the Water Industry Commission.
 - Plans should be established to provide 'strategic' capacity 16 to allow a further 60,000 new homes and 2,025 hectares of new commercial land to be connected to the public water & wastewater network. This will require 'strategic' capacity for an additional 40,000 PE at a number of wastewater treatment works and provide 'strategic' capacity for an additional 16,500 PE at a number of water treatment works.
- In formulating investment plans for this area of investment, the following factors should be taken into account: - General Register Office for Scotland's population projections; Scottish Executive's household projections; and SEPA/SW Memorandum of Understanding on the impact of proposed development on the public system operated by Scottish Water and regulated by SEPA.
- Delivery of this investment requirement should be informed by the Quality and Standards 3 Quality Programme, the spatial priorities identified in the National Planning Framework, and the development priorities identified in statutory development plans.

¹³ ibid

¹⁴ Excludes homes to be built on already serviced sites

Provision for strategic capacity has been calculated by applying a population equivalence figure to the assessed housing and commercial requirements and adjusting this for the level of anticipated constraint at part iv assets.

16 Part iv assets refer to Scottish Water's "Primary Assets"; Raw Water Intakes, Water Impounding Reservoirs, Water

Aqueducts, Water Pumping Stations, Water Treatment Works, Wastewater Treatment Works.

MALODOUR AT WASTEWATER TREATMENT WORKS

- 41 The problem of malodour at wastewater treatment works has been a matter of growing public concern for some time. This has led the Executive to produce a draft voluntary code of practice on odour control to establish standards of control and enforcement, which is due to be implemented in April 2005, and to be replaced by a statutory code in April 2006
- As part of the Quality and Standards 3 process, consideration was given to the nature of the malodour problem at wastewater treatment works and the scope to address it in the period 2006-14. Following an assessment by Scottish Water of the required remedial work needed to address odour control measures, a recommendation was made that action be taken to minimise the nuisance at the 35 worst offending of these works over the period 2006-2014. This figure was based on Scottish Water's estimate of worst offending sites and an assessment of the requirements to address problem sites over the next eight year period, and was carried out prior to discussion around the proposed statutory code of practice.
- With effect from 1 April 2006, Scottish Water and the operators on its behalf of sewage treatment works will be bound by an additional legislative control in the form of a statutory code of practice, introduced under provisions included in the Water Services (Scotland) Bill 2005. The code will require Scottish Water and their contractors to assess and control odour nuisance at all wastewater treatment works and sewage pumping stations using best practicable means. Although the proposed statutory code is scheduled to be implemented in April 2006 in conjunction with this investment programme, it is recognised compliance will occur on a roll out basis.
- Scottish Water has not yet assessed whether complying with the statutory code will place costs on it over and above those arising from the Executive's objectives and the proposed voluntary code on which the statutory code will be based. In the event that compliance does give rise to any additional operating costs or capital expenditure, such costs will be treated as arising from a new objective that the Executive has set Scottish Water subsequent to this statement. If such costs are material and Scottish Water is unable to meet them from within the charge limits and borrowing set in the SRC, Scottish Water may seek to have the determination of its charge limits reviewed. This will enable the Water Industry Commission to assess the impact of compliance on Scottish Water and if necessary to determine an increase in customer charges sufficient to cover the additional costs.
- In line with the recommendations made by the Quality and Standards Board and pending finalisation of the voluntary code of practice on odour control, Ministers require that action be taken to minimise odour at 35 existing wastewater treatment works.

In accordance with this objective Ministers require that, during the period 2006-2010, measures be implemented to minimise odour nuisance at a minimum of 14 wastewater treatment works taking into account the principle of best practicable means over the period 2006-2010. The 14 sites to be decided by a forum comprising the Executive, Scottish Water, the WIC, local authorities and WCCP by reference to those causing the greatest impact and on which agreement exists on the required remedial action

Similarly, Ministers require that, during the period 2010-14, control measures be implemented to minimise odour nuisance at a minimum of 21 wastewater treatment works taking into account the principle of best practicable means. The 21 sites to be

decided by a forum comprising the Executive, Scottish Water, the WIC, local authorities and WCCP by reference to those causing the greatest impact and on which agreement exists on the required remedial action

ALLEVIATING INTERNAL SEWER FLOODING

46 Sewer flooding is a relatively rare occurrence. Ministers recognise, however, that when it does occur it is very distressing for those customers affected and poses a risk to public health. In its first draft business plan, Scottish Water outlined possible measures to ameliorate internal sewer flooding. Minister believe that this proposal should be included within the *essential* programme of capital works. For this reason Ministers require that a net reduction of 1,140 properties from the risk of internal sewer flooding over the period 2006-2014.

In accordance with this objective Ministers require that, during the period 2006-2010, there should be a net reduction of 456 properties at risk from internal sewer flooding at a frequency of once or more than once over a period of ten years.

Similarly, Ministers require that, during the period 2010-14, there should be a net reduction of 684 properties that are at risk from internal sewer flooding at a frequency of once or more than once over a period of ten years.

47 In establishing plans for the achievement this objective, Minister expect consideration to be given to the costs associated with relief measures for a given number of properties, and the level of risk of predicted flooding.

TACKLING INADEQUATE WATER PRESSURE

- 48 Customers expect Scottish Water to supply water at a pressure that is sufficient for cleaning, drinking, washing and cooking. Without adequate pressure some household appliances, such as boilers and electric showers, may not work.
- 49 Ministers recognise the inconvenience which can be caused by inadequate water pressure, and have concluded that it would be *desirable* if the number of properties that are supplied at a pressure of less than one bar was reduced by 5,625 properties over the period 2006-2014. In setting this desirable objective for the period as a whole and in accordance with their stated order of preference, Ministers expect plans to be established to address 2,250 properties (that previously did not receive 1 bar pressure) in the period 2006-2010, and for 3,375 properties (that previously did not receive 1 bar pressure) in the period 2010-2014.
- In establishing plans for the achievement of this objective, Minister expect consideration to be given to the costs associated with improvement measures for a given number of properties, and the likelihood that properties will suffer poor pressure.
- Ministers recognise that plans should be consistent with the requirements of the Water (Scotland) Act 1980 as regards properties situated above the level of water leaving a network storage tank, or situated between the level of water leaving a network storage tank and a level 10.5 metres below the tank.

IMPROVING UNPLANNED INTERRUPTIONS TO THE WATER SUPPLY

- 52 Unplanned interruptions to the water supply can cause a significant inconvenience to customers. Such interruptions can occur for a variety of reasons these include the condition of the infrastructure or indeed natural ground movement.
- Ministers recognise the inconvenience which can be caused by unplanned interruptions in the water supply. Accordingly, they consider that it would be *desirable* if there was a net reduction of 850 in the number of properties affected by unplanned interruptions in non-trunk mains by 2014. In establishing this objective, Ministers wish that by 2006-2010 there will be a net reduction of 425 properties affected, and that by 2014 there will be a further net reduction of 425 properties affected. It is expected that delivery of this investment will improve the standard of service experience by a number of smaller communities in the north west of Scotland.

TAKING THIS IMPORTANT INVESTMENT FORWARD

- In setting objectives for the water industry, Ministers intend to:
 - achieve a substantial improvement in public health and standards of environmental protection;
 - support housing and economic growth in communities across Scotland through investment in new water and sewage capacity; and
 - achieve these outcomes while taking prudent steps to ensure that water charges remain stable and Scottish Water's capital programme is of a scale that can be delivered efficiently in the interests of all water customers.
- In accordance with the timetable set out in their letter of 26th May 2004, Ministers require Scottish Water to prepare a Business Plan setting out how they would propose to meet all of the objectives set out above. As part of this plan, Ministers will require Scottish Water to provide them with reassurance that industry regulators are content that Ministers' requirements have been included with the Plan. Thereafter the Water Industry Commission will establish by means of the Strategic Review of Charges, the resources required to deliver all essential investment objectives (to the extent that they fall due within the period of the 2006-10 Review) and also the desirable objectives (in order of priority) to the extent that the latter can be delivered with a reasonable expectation of efficiency, and without charges to customers rising by more than levels of inflation that are projected in the period to 2010. Ministers have asked that a draft of the Strategic Review is published by the end of June 2005.
- Ministers recognise that planning investment over an 8 year period will promote value for money in the use of customers' and taxpayers' resource. Ministers also attach considerable importance to the establishment of *effective monitoring and review mechanisms* in order to ensure that the programme is delivered: efficiently; on time; and that it is sufficiently flexible to accommodate changes that may become necessary over time. For this reason Ministers require that prior to commencement of the investment programme in 2006:

An investment monitoring group will be established to monitor the delivery of the investment programme. This Group will be made up of Scottish Executive, SEPA,

DWQR, WCCP, Water Industry Commission and Scottish Water who will meet on a regular basis to review progress on the capital programme, and that regulators will undertake detailed monitoring of those elements of the programme that fall under their auspices.

Arrangements for making changes in the investment programme should be put in place that will allow Scottish Water and its regulators to utilise better information or respond to unanticipated or unpredictable events. These arrangements should allow Scottish Water, in discussion with its regulators, within the overall terms of the investment programme and costs, to change the means by which these objectives are to be secured – all to the benefit of customers. Where Ministers consider changing the investment objectives or wish to incorporate a new requirement, they will normally consult the parties to these arrangements.

Scottish Executive 9 February 2005

The investment programme - letter from the **Drinking Water Quality Regulator**



Alan Sutherland Water Industry Commissioner for Scotland Ochil House Springkerse Business Park **STIRLING** FK77XE

Drinking Water Quality Regulator for Scotland

PO Box 23598 **EDINBURGH** EH6 6WW

Tel: 0131 244 0184 Fax: 0131 244 0259

Email: Regulator @dwqr.org.uk

Our Ref: 2DWE/23/8 Your Ref: ICT/SRC2005

Date: 1 June 2005

Dear Alan

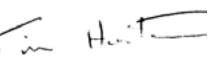
SRC 2005 – INVESTMENT PROGRAMME REVIEW

I refer to your letter of 27 May 2005 and confirm that following your discussions with Colin McLaren and my review of Scottish Water's investment proposals; I am content that Scottish Water's investment programme meets, in full, the drinking water quality objectives set out in Lewis MacDonald's statement of 9 February 2005.

At the meeting held on 24 May it was agreed that there was a degree of over-scoping of projects and a lack of strategic thinking in Scottish Water's investment programme in relation to achieving the water quality objectives. However, I am content that the programme correctly identifies the need for water quality improvements, in-line with Ministerial Guidance.

Yours sincerely





TIM HOOTON

The investment programme – letter from the Scottish Environment Protection Acency



Our Ref: Your Ref:

Q&S3 ICT/SRC2005

If telephoning ask for Colin Bayes

13 June 2005

Alan D A Sutherland Water Industry Commissioner for Scotland Ochil House Springkerse Business Park STIRLING FK7 7XE

Dear Alan

SRC 2005 - INVESTMENT PROGRAMME REVIEW

I refer to your letter dated 27 May 2005 regarding the review of Scottish Water's Investment Programme proposals as set out in their second draft Business Plan submission.

I can confirm that the proposed programme meets the environmental objectives set out in the Ministerial Statement of February 2005. This covers the Essential, Desirable 1 and Desirable 2 investment programme subdivisions contained in the Ministerial Statement and the Environment Work Package Report.

There are a few minor issues related to the scope and definition of individual schemes which will need to be addressed. These are highlighted in the attachment to this letter.

I would like to thank you and your staff for your management of this demanding but vital review process.

Yours sincerely

Colin D Bayes

Director of Environmental Protection and Improvement



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Scottish Water's 'Table C' investment plan from its second draft business plan

In this appendix we provide a full listing of Scottish Water's Quality and Standards III investment plan submission from Table C of the second draft business plan.

In our guidance for the second draft business plan, we specified the format for this table in detail. For each project, we requested information on the project drivers and the delivered outputs, along with financial information and project phasing. Detailed definition of the investment programme plays an essential role in allowing stakeholders to monitor Scottish Water's performance in delivering the investment programme and in ensuring that customers receive value for money.

We also specified that the investment plan should be fully consistent with the Ministerial Guidance of February 2005. In Chapters 7, 13 and 14 of Volume 5 of this draft determination, we describe the process by which we have reviewed Scottish Water's investment programme and assessed the efficient investment required to meet Ministers' objectives. We also provide our assessment of the funding necessary to deliver the objectives set out by Ministers for the 2006-10 regulatory control period. This includes both the 'essential' and 'desirable' objectives set out in the Ministerial Guidance.

Table C lists both 'base' and 'enhancement' projects. 'Base' projects are associated with capital maintenance activity to maintain existing levels of service. Enhancement projects are associated with improvements to drinking water quality, environmental performance and customer service.

Enhancement projects in this table that are scheduled for delivery in the 2006-10 regulatory control period represent the outputs which Scottish Water is required to deliver in the next regulatory period. Any changes to these projects, or to the associated outputs, will need to involve stakeholder agreement through the Scottish Executive's capital monitoring group.

The enhancement projects for 2010-14 are indicative only. The investment programme for the 2010-14 period will be assessed as part of the next Strategic Review of Charges in 2009, which will be undertaken by the new Water Industry Commission.

In Chapter 14 of Volume 5 some enhancement projects within Table C have been identified as errors or duplications in the submission. These are highlighted in Table C below as having been removed from the programme.

For capital maintenance ('base' projects), we have based our assessment on Ofwat's capital maintenance econometric models. We have allowed additional funds to enable Scottish Water to address public health and environmental concerns expressed by the quality regulators. We have also allowed an amount to enable Scottish Water to begin to make progress towards an economic level of leakage and to improve its ability to plan effective capital maintenance activity.

The capital maintenance projects in this table do not, therefore, represent a definitive list of the projects that Scottish Water is required to carry out during the 2006-10 period. Instead, Scottish Water will need to re-assess the programme of capital maintenance work necessary to meet the requirements set out in the Ministerial Guidance, within the assessed level of expenditure requirement.

We will continue to work with Scottish Water and the stakeholder group to further define the investment programme in the period prior to the final determination in November 2005.

			18-1-11-1	War.												0	
	2	Gener	al Project Informat	tion 6	7		12	13	14	16	17	ncial Informatio	m of Chosen Sce 19	mario 20	21	Capital Ma	aintenance 31
-	2	-	_				14	10	19	10	- 17	10	- "	20	- 41	- 30	
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -	Formand (Autor)		Total Q&SIII	Desired	Project	Project	Project	Project	Capital	Capital
Project		project (primary	Project			Proportion of Projects over	Project, Construction	Forecast / Actual – Project, Beneficial Use		(2006 - 2014	Project Expenditure	Expenditure Profile	Expenditure Profile	Expenditure Profile	Expenditure Profile	Maintenance Element of	Maintenance Element of
Autocode	Project Title	purpose)	Classification 1		£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
162	Stirling STW Refurb	WasteWater	Base	0.000	0.000	1.505			Scottish Water Wide	1.503	0.001	0.011	0.067	0.731	0.695	1.505	100.00%
251	AVIEMORE STW - SCC	WasteWater	Quality	0.000	0.000	1.836	25/12/11		Highland	1.836	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Gairloch WTW - Upgrade HAMILTON STW Upgrade	Water WasteWater	Quality Quality	0.000	0.044 0.000		25/1/09 10/7/12		Highland South Lanarkshire	2.194 12.117	0.000			1.643 0.000	0.064 0.000	0.000 0.000	
	Camphill WTW - Upgrade	Water	Quality	0.000			23/9/08		North Ayrshire	5.385	0.000				1.086	0.000	
	Muirdykes New WTW - Upgrade	Water	Base	0.148			10/7/08		Renfrewshire	13.582	0.003				5.210		
	Loch Eck WTW - Upgrade Bradan WTW - Upgrade	Water Water	Quality Quality	0.015 0.000			23/9/08 23/9/08		Argyll And Bute South Ayrshire	9.361 6.836	0.000				1.739 1.379	0.740 0.000	
	Assynt WTW - Upgrade	Water	Quality	0.051	0.204		10/7/08		Highland	12.658	0.090				0.369	2.536	
	PHILIPSHILL STW Upgrade	WasteWater	Quality	0.000	6.662		10/7/08	31/3/10		18.826	0.000			9.797	7.275	0.715	
	Barciye WTW - Upgrade Perth STW - Sludge Digestion	Water WasteWater	Quality Quality	0.000			24/12/08 10/7/12		Dumfries And Galloway Perth & Kinross	3.741 15.468	0.000			2.801 0.000	0.109 0.000	0.000 0.000	
10513	Glenconvinth WTW - Upgrade	Water	Quality	0.000	0.038		25/1/09		Highland	1.887	0.000			1.413	0.055		
	Stranraer STW - Sludge Digestion	WasteWater	Quality	0.000			23/9/12		Dumfries & Galloway	9.139	0.000			0.000	0.000	0.000	
	Aberfeldy STW Upgrade Aberfoyle STW Refurb	WasteWater WasteWater	Quality Base	0.000	0.000		28/6/09	31/3/10	Perth & Kinross Stirling	0.212 0.007	0.000			0.027 0.000	0.176 0.007	0.000 0.007	0.00% 100.00%
30002	Acharacle WTW - Upgrade	Water	Quality	0.000	0.036	1.757	24/1/08	31/3/09	Highland	1.792	0.000	0.116	0.603	1.073	0.000	0.000	0.00%
	Achmelvich WTW - Completion Achmelvich WTW - Upgrade	Water Water	Quality Quality	0.000	0.008 0.013		10/4/08	21/2/00	Scottish Water Wide Scottish Water Wide	0.418 0.674	0.000			0.000 0.409	0.000	0.000 0.000	
	Achmervich WTW - Opgrade Achmore WTW - Upgrade	Water	Quality	0.000	0.013		24/1/08		Highland	1.187	0.000			0.409	0.000	0.000	
30006	Achnasheen New WTW - Upgrade	Water	Quality	0.000	0.004	0.174	29/7/07	31/3/08	Highland	0.169	0.009	0.026	0.143	0.000	0.000	0.000	0.00%
	Acreknowe WTW Includes Flex Farm - Upgrade Afton WTW - Upgrade	Water Water	Quality Quality	0.000 0.021	0.067 0.094		24/12/08 23/9/08		Scottish Borders South Ayrshire	3.366 5.774	0.000			2.521 3.654	0.098 1.029	0.000 1.057	
	AIRTH STW Upgrade	WasteWater	Quality	0.000	0.000		25/12/11	31/3/13		2.264				0.000	0.000	0.000	
	ALFORD STW Upgrade	WasteWater	Quality	0.000			11/3/13		Aberdeenshire	0.525				0.000	0.000	0.000	
	ALLERS STW Upgrade Alligin WTW - Completion	WasteWater Water	Quality Quality	0.000			23/9/12	31/3/14	South Lanarkshire Scottish Water Wide	9.323 0.264	0.000			0.000	0.000	0.000	
	Alligin WTW - Upgrade - Upgrade	Water	Quality	0.000			10/4/08	31/3/09	Scottish Water Wide	0.987	0.000				0.000	0.000	
	Alloa STW - Refurb	WasteWater	Base	0.000	0.000		40/0/00	24/2/42	Clackmannanshire	0.578	0.000			0.048	0.522	0.579	
	Alnwickhill WTW - Upgrade ALTNAHARRA WTW - Completion	Water Water	Quality Quality	0.066			10/6/08	31/3/10	Edinburgh, City Of Scottish Water Wide	39.099 0.481	0.363 0.000			18.263 0.000	13.801 0.000	3.289 0.000	
	ALTNAHARRA WTW - Upgrade	Water	Quality	0.000	0.010	0.511	10/4/08		Scottish Water Wide	0.521	0.000	0.031	0.175	0.316	0.000	0.000	0.00%
	AMIAIN WELL DALE SPS Befure	Water	Quality	0.058			23/9/08		East Ayrshire	9.971	0.001				3.391	2.906	
	ANNAN WELLDALE SPS Refurb ANNATHILL STW Upgrade	WasteWater WasteWater	Base Quality	0.008	0.000		28/7/09	31/3/10	Scottish Water Wide North Lanarkshire	0.422 0.524	0.000			0.212 0.083	0.187 0.413	0.423 0.000	
30021	ANNBANK STW Upgrade	WasteWater	Quality	0.000	0.000	1.300	24/12/12		South Ayrshire	1.300	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Ardeonaiq WTW - Upgrade Ardrishaig WTW - Upgrade	Water Water	Quality Quality	0.000	0.003 0.052		28/7/08 24/12/08		Stirling Argyll And Bute	0.145 3.546	0.000			0.117 2.053	0.000 0.878	0.000 0.951	0.00% 26.82%
	ARDVOURLIE WTW - Completion	Water	Quality	0.000			24/12/00	31/3/10	Scottish Water Wide	0.372				0.000	0.000	0.000	
	ARDVOURLIE WTW - Upgrade	Water	Quality	0.000			28/7/08		Scottish Water Wide	0.271				0.165	0.000	0.000	
	Arinagour Coll WTW - Upgrade ARMADALE STW - Completion	Water WasteWater	Quality Quality	0.000	0.004 0.000		28/7/13	31/3/14	Argyll And Bute Scottish Water Wide	0.179 0.041	0.000			0.000	0.000	0.000 0.000	
	ARMADALE STW Upgrade	WasteWater	Quality	0.000	0.000		25/12/11	31/3/13	West Lothian	1.510	0.000			0.000	0.000	0.000	
	Arnisdale WTW - Upgrade	Water	Quality	0.000	0.025				Highland	1.167	0.081			0.000	0.000	0.000	
	ASHGILL STW Upgrade Ashgrove WTW - Upgrade	WasteWater Water	Quality Quality	0.000					South Lanarkshire North Avrshire	2.721 3.644	0.000			0.000 2.729	0.000 0.106	0.000 0.000	
	Asset Intelligence - Asset Document and Procedures Management	t							-								
30032	System - SWW Asset Intelligence - Asset Document and Procedures Management	WasteWater	Base	0.197	0.000	0.197			Scottish Water Wide	0.395	0.000	0.312	0.000	0.028	0.000	0.395	100.00%
	System - SWW	Water	Base	0.197	0.000	0.197			Scottish Water Wide	0.395	0.000			0.028	0.000	0.395	
30034	Asset Intelligence - Asset Information Management - SWW	WasteWater	Base	0.138	0.000	0.138			Scottish Water Wide	0.249	0.026	0.125	0.125	0.000	0.000	0.276	100.00%
	Asset Intelligence - Asset Information Management - SWW Asset Intelligence - Asset Inventory Development - SWW	Water WasteWater	Base Base	0.138 4.601					Scottish Water Wide Scottish Water Wide	0.249 4.957					0.000 0.086	0.276 5.070	
30037	Asset Intelligence - Asset Inventory Development - SWW	Water	Base	4.601	0.000	0.469			Scottish Water Wide	4.957	0.114	1.254	1.361	0.925	0.086	5.070	100.00%
	Asset Intelligence - Asset Planning Analysis Tools - SWW Asset Intelligence - Asset Planning Analysis Tools - SWW	WasteWater	Base	1.309					Scottish Water Wide	2.336					0.000		
30035	Asset Intelligence - Asset Planning Analysis 100is - SVVV Asset Intelligence - Capital Investment Programme Management -	Water	Base	1.861	0.000	1.309			Scottish Water Wide	2.888	0.283	0.921	0.962	0.585	0.000	3.171	100.00%
30040	sww	WasteWater	Base	0.418	0.000	0.418			Scottish Water Wide	0.836	0.000	0.386	0.146	0.138	0.110	0.836	100.00%
30044	Asset Intelligence - Capital Investment Programme Management - SWW	Water	Base	0.418	0.000	0.418			Scottish Water Wide	0.836	0.000	0.386	0.146	0.138	0.110	0.836	100.00%
30042	Asset Intelligence - Cross System Data Integration - SWW	WasteWater	Base	0.836	0.000	0.836			Scottish Water Wide	1.671	0.000	0.000	1.286	0.000	0.000	1.671	100.00%
30043	Asset Intelligence - Cross System Data Integration - SWW	Water	Base	0.836	0.000	0.836			Scottish Water Wide	1.671			1.286	0.000	0.000	1.671	100.00%
	Asset Intelligence - Infrastructure Visual Surveys - SWW Asset Intelligence - Infrastructure Visual Surveys - SWW	Water WasteWater	Base Base	6.183 12.032					Scottish Water Wide Scottish Water Wide	8.033 12.120	0.317 0.740				0.929 1.606	8.350 12.859	
30040		3.20.0114161		12.002	0.000	0.021				12.120	0.740	2.020	1.512	1.000	1.000	12.003	155.5578
20011	Asset Intelligence - Intelligent tagging of assets implementation	MostalMata	Page	0.000		4.075			Coeffich Marter 1881	4.077	2 222	0.000	2 222	0.440	0.007	4.075	400.000/
30046	and information management system - SWW	WasteWater	Base	0.000	0.000	1.275			Scottish Water Wide	1.275	0.000	0.000	0.966	0.116	0.097	1.275	100.00%
	Asset Intelligence - Intelligent tagging of assets implementation																
	and information management system - SWW	Water	Base	0.000					Scottish Water Wide	1.275					0.097	1.275	
	Asset Intelligence - Inventory Development Activities - SWW Asset Intelligence - Inventory Development Activities - SWW	WasteWater Water	Base Base	0.855 0.855					Scottish Water Wide Scottish Water Wide	1.711 1.711	0.000			0.000	0.000	1.711 1.711	
	Asset Intelligence - Miscellaneous Performance / Serviceability																
30050	Monitoring Tools - SWW Asset Intelligence - Modelling - Maintenance of all wastewater	Water	Base	0.291	0.000	0.291			Scottish Water Wide	0.530	0.053	0.238	0.291	0.000	0.000	0.583	100.00%
30051	Asset Intelligence - Modelling - Maintenance of all wastewater impact models- SWW	WasteWater	Base	28.647	0.000	0.000			Scottish Water Wide	24.787	3.860	3.797	3.597	2.418	2.925	28.647	100.00%
	Asset Intelligence - Modelling - Maintenance of all water network																
30052	models- SWW	Water	Base	14.787	0.000	0.000			Scottish Water Wide	13.392	1.395	2.969	1.600	1.600	1.600	14.787	100.00%

		Genera	l Project Informat	ion							Fina	ncial Informatio	n of Chosen Sce	nario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or		Infra - IRE	Non IRE	Non John	Forecast /			Total Q&SIII		Decinat	Devices	Desired	Declarat	Proportion of	Proportion of
		wastewater project			Proportion of	Non - Infra	Actual - Project,	Forecast / Actual -		Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
30053	Asset Intelligence - Non infrastructure Visual Surveys - SWW	WasteWater	Base	0.000	0.000	5.406			Scottish Water Wide	5.406	0.000	0.824	0.824	0.824	0.824	5.406	100.00%
	Asset Intelligence - Non infrastructure Visual Surveys - SWW	Water	Base	0.000		5.406			Scottish Water Wide	5.406	0.000		0.824	0.824		5.406	
	Asset Intelligence - Performance/ Demand Logging - SWW Asset Intelligence - Performance/ Demand Logging - SWW	WasteWater Water	Base Base	0.000 3.632		3.146 3.146			Scottish Water Wide Scottish Water Wide	2.618 6.197	0.528 0.581		0.528 0.902	0.516 0.891	0.516 0.891	3.146 6.778	
	Asset Intelligence - Sludge management - SWW	WasteWater	Base	0.000		0.534			Scottish Water Wide	0.534	0.000			0.000	0.000	0.534	
	Asset Intelligence - Specialist Inspections - SWW	Water	Quality	2.366	1.807	1.478			Scottish Water Wide	5.598	0.053	1.134	0.329	1.399	1.399	2.741	
30059	Asset Intelligence - Specialist Inspections - SWW Asset Intelligence - Waste water network performance	WasteWater	Base	11.477	0.000	0.367			Scottish Water Wide	11.263	0.581	1.720	1.618	1.585	1.057	11.845	100.00%
30060	management tool - SWW	WasteWater	Base	3.156	0.000	0.000			Scottish Water Wide	2.844	0.313	0.943	0.952	0.287	0.000	3.156	100.00%
	ATHELSTANEFORD STW Upgrade	WasteWater	Quality	0.000	0.000	0.704	11/3/13		East Lothian	0.704	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Auchneel WTW - Upgrade	Water	Quality	0.000			24/1/08		Dumfries And Galloway	2.331	0.000			1.396	0.000	0.000	
	AUCHTERHOUSE STW Upgrade AUCHTERTOOL STW Upgrade	WasteWater WasteWater	Quality Quality	0.000		1.369 1.050	24/12/12 24/12/12			1.369 1.050	0.000			0.000 0.000	0.000	0.000 0.000	
	Aultbea WTW - Upgrade	Water	Quality	0.000		0.368	28/7/08		Highland	0.376	0.000			0.228		0.000	
	Authorised Departure Schemes	Water	Quality	0.000	5.282	0.000			Scottish Water Wide	5.282	0.000			0.660	0.660	0.000	
	BACK STW Upgrade Back Tolsta WTW - Upgrade	WasteWater Water	Quality Quality	0.000		2.275 2.413	25/12/07 25/1/09		Western Isles Western Isles	2.275 2.463	0.000		0.658 0.136	1.497 1.127	0.000 1.168	0.000	
	Backies WTW - Upgrade	Water	Quality	0.000		0.164	28/7/13		Highland	0.167	0.000			0.000		0.000	
	BADCAUL WTW - Completion	Water	Quality	0.000	0.006	0.299			Scottish Water Wide	0.305	0.000	0.305	0.000	0.000	0.000	0.000	0.00%
	BADCAUL WTW - Upgrade Ballachulish STW Upgrade	Water WasteWater	Quality Quality	0.000	0.036 0.000	1.781 1.381	24/1/08	31/3/09	Scottish Water Wide Highland	1.817 1.381	0.000			1.088 0.399		0.000 0.000	
	Ballachulish WTW - Upgrade	Water	Quality	0.000		0.371	28/7/08	31/3/09	Highland	0.378	0.000			0.394		0.000	
30074	Ballater WTW - Upgrade	Water	Quality	0.000	0.041	2.018	24/1/07	31/3/08	Aberdeenshire	1.926	0.133	0.693	1.233	0.000	0.000	0.000	0.00%
	Ballygrant WTW - Upgrade	Water	Quality	0.000		0.325	28/7/08		Argyll And Bute	0.332	0.000			0.267	0.000	0.000	
	Balmacara WTW - Upgrade Balmichael WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/08 24/12/08		Highland North Ayrshire	1.757 3.847	0.000			1.052 2.881	0.000 0.112	0.000	
	Balmore Water Pumping Stations - Refurbishment	Water	Base	0.000		1.586	24/2/09		West Dunbartonshire	1.585	0.001	0.083	0.373	1.128	0.001	1.586	
	Balmore WTW - Upgrade	Water	Quality	0.106			10/7/08		East Dunbartonshire	13.652	0.002			7.430		5.283	
	Balguhidder WTW - Upgrade Balvicar Isle of Seil STW Upgrade	Water WasteWater	Quality Quality	0.000	0.005 0.000	0.260 1.172	28/7/08 24/12/08		Stirling Argyll & Bute	0.265 1.172	0.000			0.213 0.339		0.000 0.000	
	BANCHORY STW Refurb	WasteWater	Base	0.000			24/12/00	01/0/10	Aberdeenshire	0.319	0.000			0.027		0.319	
	BARASSIE MARR SCREENING CHAMBER TROON CSO																
	SCHEME - Completion Barra WTW - Upgrade	WasteWater Water	Quality Quality	0.000		0.036 3.748	24/12/08	31/3/10	Scottish Water Wide Western Isles	0.238 3.825	0.000			0.000 2.864	0.000 0.111	0.000	
	BARRHILL STW Refurb	WasteWater	Base	0.000		0.370	28/7/09		South Ayrshire	0.370	0.000		0.017	0.186	0.164	0.370	
	BARVAS STW Upgrade	WasteWater	Quality	0.000	0.000	2.508			Western Isles	2.507	0.000	0.024		0.789	1.578	0.000	0.01%
	BATHGATE STW Upgrade Bayhead WTW - Upgrade	WasteWater Water	Quality	0.000		3.934 1.515	22/11/12 25/1/09		West Lothian Western Isles	3.934 1.546	0.000			0.000 0.659	0.000 0.770	0.000	
	Beasdale WTW - Upgrade	Water	Quality Quality	0.000			25/1/05		Highland	0.074	0.000			0.059		0.000	
30090	Belmore New WTW - Upgrade	Water	Base	0.069	0.067	6.667	23/9/08	31/3/10	Argyll And Bute	6.802	0.001	0.149	0.769	3.463	2.421	3.434	50.48%
	Benbecula WTW - Upgrade BERNERAY WTW - Completion	Water Water	Quality	0.000		4.485 0.463	24/12/08	31/3/10	Western Isles Scottish Water Wide	4.577 0.473	0.000		0.832 0.000	3.427 0.000	0.133 0.000	0.000	
	BERNERAY WTW - Completion BERNERAY WTW - Upgrade	Water	Quality Quality	0.000	0.010	0.484	28/7/08	31/3/09	Scottish Water Wide	0.473	0.000			0.397	0.000	0.000	
30094	Black Esk System WTW - Upgrade	Water	Quality	0.013	0.178	9.333	23/9/08	31/3/10	Dumfries & Galloway	9.524	0.000	0.218	0.549	6.425	2.332	0.640	6.72%
	Blackpark WTW - Upgrade	Water	Quality	0.000			23/9/08		Highland	7.874	0.000			5.629		0.000	
	BLACKRIDGE STW - Completion BLACKRIDGE STW Upgrade	WasteWater WasteWater	Quality Quality	0.000			24/12/12		Scottish Water Wide West Lothian	0.183 1.599	0.000			0.000		0.000	
30098	Blairlinnans WTW - Upgrade	Water	Quality	0.032	0.275	15.008	10/7/08	31/3/10	West Dunbartonshire	15.194	0.120	0.539	4.850	8.182	1.622	1.585	10.35%
	Boardhouse WTW - Upgrade	Water	Quality	0.016			24/12/08		Orkney Islands	4.566	0.000			3.495		0.792	
	Bohuntin WTW - Upgrade BONAWE ST Upgrade	Water WasteWater	Quality Quality	0.000			28/7/08 25/12/11		Highland Argyll & Bute	0.281 1.542	0.000 0.000			0.226 0.000		0.000	
	Bonchester WTW - Upgrade	Water	Quality	0.000		0.160	28/7/13		Scottish Borders	0.163	0.000			0.000		0.000	
	BONESS Refurb	WasteWater	Base	0.000	0.000	0.376			Scottish Water Wide	0.375	0.000	0.000	0.005	0.031	0.339	0.376	100.00%
	BONESS STW Refurb BONNYBRIDGE STW Upgrade	WasteWater WasteWater	Base Quality	0.000		0.003 1.785	25/12/11	31/3/13	Scottish Water Wide	0.003 1.785	0.000			0.000		0.003	
	Bonnycraig WTW - Upgrade	Water	Quality	0.000			25/1/09		Scottish Borders	2.238	0.000			0.954		0.000	
30107	BOTHWELLBANK STW Upgrade	WasteWater	Quality	0.000	0.000	5.752	23/9/12	31/3/14	South Lanarkshire	5.752	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	BOWHOUSE STW Upgrade BOWHOUSE STW Upgrade	WasteWater WasteWater	Quality	0.000			25/12/11 25/12/11			1.093 1.486	0.000			0.314 0.000		0.008	
	Bracadale WTW - Upgrade	Water	Quality Quality	0.000			28/7/08		Highland	0.336	0.000			0.000		0.000	
30111	BRAE PLAYING FIELD ST Upgrade	WasteWater	Quality	0.000	0.000	1.313	25/12/07	31/3/09	Shetland Islands	1.313	0.000	0.069	0.380	0.864	0.000	0.000	0.00%
	Braes WTW - Upgrade	Water	Quality	0.000		1.030	24/1/07		Highland	0.983	0.068			0.000		0.000	
	BRAIDWOOD & CROSSFORD STW Upgrade Brechin STW - Sludge Digestion	WasteWater WasteWater	Quality Quality	0.000			24/12/08 10/7/12		South Lanarkshire Angus	1.980 10.495	0.000			1.291 0.000		0.077 0.000	
30115	BRECHIN STW Upgrade	WasteWater	Quality	0.000	0.000	0.867	11/3/12	31/3/13	Angus	0.867	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Bressay WTW - Upgrade	Water	Quality	0.000		4.413	24/12/08		Shetland Islands	4.503	0.000		0.819	3.372		0.000	
	BRIDGEND STW Upgrade BROADFORD STW - SCC		Quality Quality	0.000			24/12/12 25/12/11		West Lothian Highland	1.338 2.169	0.000			0.000		0.000	
30118	DIVOVDI OLD SIM - SCC	vvastevvatet	Quality	0.000	0.000	2.109	20/12/11	31/3/13	i iiyillallu	2.109	0.000	0.000	0.000	0.000	0.000	0.000	0.00%

Water Control Water Contro	100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
Water or unstanding project Proj	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00%
Project Proj	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00%
Project Proj	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00%
Project	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00%
3019 Roadford WTW - Upgrade	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30119 Reselled MTM Liberarde Water Quality 0.000	0.00% 100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30120 Buschie Wheter Pumpins Sation - Refurbishment Water Base 0.000 0.985 1.256/08 31/10/9 City of Glasspow 0.985 0.000 0.041 0.113 0.832 0.000 0.001 30122 Burnscrosks WTW - Upgrade Water 0.001 0.091 0.469 2.877/08 31/10/9 Striffing 9.511 0.500 0.245 0.529 0.885 1.783 0.001 0.103 0.177 0.221 0.231 0.239/08 31/10/9 Striffing 9.511 0.500 0.245 0.529 0.885 1.783 0.001 0.103 0.107 0.245 0.000	100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30120 Buschie Wheter Pumpins Sation - Refurbishment Water Base 0.000 0.985 1.256/08 31/10/9 City of Glasspow 0.985 0.000 0.041 0.113 0.832 0.000 0.001 30122 Burnscrosks WTW - Upgrade Water 0.001 0.091 0.469 2.877/08 31/10/9 Striffing 9.511 0.500 0.245 0.529 0.885 1.783 0.001 0.103 0.177 0.221 0.231 0.239/08 31/10/9 Striffing 9.511 0.500 0.245 0.529 0.885 1.783 0.001 0.103 0.107 0.245 0.000	100.00% 0.00% 7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30122 Burncroots WTW- Upgrade Water Quality Q.001 Q.177 9.221 23,909 31,9710 Stifling 9.511 Q.000 Q.246 0.597 6.386 1,783 Q.00 30124 Campbelloom WTW- Upgrade Water Base Q.053 Q.036 4.361 24,1729 31,9714 North Lanerschire 2,898 Q.000 Q.000 Q.000 Q.000 Q.000 Q.000 30124 Campbelloom WTW- Upgrade Water Quality Q.037 Q.164 6.528 23,909 31,9710 Stifling Q.001 Q.128 Q.001	7.05% 0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30124 CALDERCRUX STW Upgrade Valet Base 0.053 0.036 4.361 22/11/28 31/3/14 North Lanarkshire 2.898 0.000	0.00% 59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30124 Campbellown WTW - Upgrade Water Base 0.055 0.036 4.361 24/12/08 31/A/10 Arroll And Bute 4.448 0.001 0.152 0.743 2.652 0.901 2.2	59.36% 26.16% 0.00% 100.00% 0.00% 0.00%
30125 Camrich WTW - Upcrade Water Quality Qualit	0.00% 100.00% 0.00% 0.00% 0.00%
30127 Capital Maintenance STW - SE WasteWater Base 0.000 0.000 0.311 East Arshire 0.311 0.000 0.	100.00% 0.00% 0.00% 0.00%
30128 CARBARN STW - SCC WasteWater Quality 0.000	0.00% 0.00% 0.00%
30129 Cargen Borehole WTM- Upgrade	0.00% 0.00%
30130 CARLOWAY STW Upgrade Waste Water Quality 0.000	0.00%
30132 Carriok Castle WTW - Upgrade Water Quality 0.000 0.03 0.143 2877/88 31/3/9 Arryll And Bute 0.146 0.000 0.007 0.021 0.118 0.000 0.15 0.001	0 000/
30133 Carron Vallev Houses WTW - Upgrade Water Quality 0.011 0.033 2.135 25/109 31/3/10 Stirling 2.179 0.000 0.17 0.627 1.434 0.001 0.1 0.31 31/3/10 Stirling 2.179 0.000 0.17 0.627 1.434 0.001 0.1 0.31 31/3/10 Stirling 2.179 0.000 0.17 0.627 1.434 0.001 0.1 0.1 0.31 31/3/10 Stirling 2.179 0.000 0.177 0.627 1.434 0.001 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0	
30134 Carron Valley WTW - Upgrade Water Quality 0.024 0.294 15.586 107/08 31/3/10 Falkrik 15.775 0.128 0.578 5.172 8.650 1.377 1.1	
30135 Carsphairn WTW - Upgrade Water Quality 0.000 0.025 1.238 24/1/1/8 31/3/9 Dumfries And Galloway 1.264 0.000 0.082 0.425 0.757 0.000 0.01 0.013 0.013 0.013 0.013 0.014 0.014 0.014 0.014 0.015 0.014 0.015 0.01	
30137 Castle Moffat WTW - Upgrade Water Quality Q.011 Q.110 5.929 23.9/08 31/3/10 East Lothian 6.050 Q.000 Q.146 Q.396 4.393 1.113 Q.500 Q	
30138 CATRINEHOLM STW (CATRINE STW) Upgrade WasteWater Quality 0.000 0.0	
30139 CERES STW Upgrade WasteWater Quality 0.000 0	
30141 Cladich WTW - Upgrade Water Quality Qual	
30142 Clatto WTW - Upgrade Water Quality 0.032 0.464 24.302 10/7/08 31/3/10 Dundee, City Of 24.595 0.202 0.994 8.433 14.334 0.834 1.50	
30143 CLERKLYHILL - BURGHEAD WTW - Completion Water Quality 0.000 0.007 0.329 Scottish Water Wide 0.336 0.000 0.336 0.000 0.	
30144 CLERKLYHILL - BURGHEAD WTW - Upgrade Water Quality 0.000 0.051 2.498 25/12/07 31/3/09 Scottish Water Wide 2.549 0.000 0.165 0.858 1.526 0.000 0.001 0.	
30146 Clunas WTW - Upgrade Water Quality 0.011 0.043 2.646 24/12/08 31/3/10 Highland 2.700 0.000 0.027 0.219 1.371 1.082 0.54	
30147 COALBURN STW Refurb WasteWater Base 0.000 0.000 0.254 South Lanarkshire 0.254 0.000 0.000 0.000 0.000 0.000 0.000 0.30 0.021 0.230 0.230 0.230 0.000 0	
30148 COALBURN STW Upgrade WasteWater Quality 0.000 0.000 2.973 22/11/12 31/3/14 South Lanarkshire 2.973 0.000 0.0	
30149 Code of Practice of SR Security - SWW Water Quality 0.000 0.000 47.719 Scottish water Wide 47.544 0.175 11.886 11.886 11.886 0.0	
30150 Colonsay New WTW - Upgrade Water Quality 0.000 0.035 1.726 24/1/08 31/3/09 Argyll And Bute 1.761 0.000 0.114 0.593 1.055 0.000 0.0	
30151 Compliance with historical WQ reports Water Quality 0.000 6.171 0.000 Scottish Water Wide 6.171 0.000 0.771 0.771 0.771 0.771 0.70 0.771 0	
30153 CORNHILL STW Upgrade WasteWater Quality 0.000 0.001 11/3/13 31/3/14 Aberdeenshire 0.601 0.000 0.	
30154 Corsehouse WTW - Upgrade Water Quality 0.037 0.063 4.889 24/12/08 31/3/10 East Ayrshire 4.988 0.001 0.223 1.005 3.668 0.091 1.8	
30155 Coulter New WTW - Upgrade Water Quality 0.000 0.122 5.957 23/9/08 31/3/10 South Lanarkshire 6.079 0.000 0.149 0.358 4.346 1.226 0.000 0.00	
30156 COUPAR ANGUS STW Upgrade WasteWater Quality 0.000 0.000 0.840 11/3/09 31/3/10 Perth & Kinross 0.840 0.000 0.000 0.000 0.045 0.134 0.661 0.00 0.0	
30158 Craighead WTW - Upgrade Water Quality 0.023 0.099 6.007 23/9/08 31/3/10 Aberdeenshire 6.129 0.000 0.260 1.176 4.548 0.144 1.7	
30159 Craighouse WTW - Upgrade Water Quality 0.000 0.006 0.294 28/7/08 31/3/09 Argyll And Bute 0.300 0.000 0.015 0.044 0.241 0.000 0.00	
30160 Craignure Filters WTW - Upgrade Water Quality 0.000 0.011 0.522 10/4/08 31/3/09 Argyll And Bute 0.533 0.000 0.031 0.178 0.323 0.000 0.00 0.000 0	
30162 CROFTAMIE STW Upgrade WasteWater Quality 0.000 0.000 1.420 24/12/12 31/3/14 Stirling 1.420 0.000	
30163 Cromarty WTW - Upgrade Water Quality 0.000 0.003 0.161 28/7/13 31/3/14 Highland 0.164 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00%
30164 Crossmicheal No 1 ST Upgrade WasteWater Quality 0.000 0.483 28/6/09 31/3/10 Dumfries & Galloway 0.483 0.000	
30165 CSO Capital Maintenance - NE WasteWater Base 0.490 0.000 0.087 Scottish Water Wide 0.575 0.001 0.063 0	
30167 CSO Capital Maintenance - SE WasteWater Base 0.629 0.000 0.111 Scottish Water Wide 0.738 0.002 0.080 0.080 0.080 0.080 0.080 0.080	
30168 CSO Capital Maintenance - SW WasteWater Base 0.589 0.000 0.104 Scottish Water Wide 0.692 0.002 0.075 0.075 0.075 0.075 0.075	100.00%
30169 Cullivoe WTW - Upgrade Water Quality 0.000 0.051 2.499 24/12/08 31/3/10 Shetland Islands 2.550 0.000 0.103 0.464 1.910 0.074 0.0	
30170 Cults Water Pumping Stations - Refurbishment Water Base 0.000 0.000 1.666 25/2/08 31/3/09 City of Aberdeen 1.666 0.001 0.088 0.391 1.187 0.000 1.600 0.001 0.000 0	
30172 Cupar STW Upgrade WasteWater Quality 0.000 0.000 0.682 11/3/12 31/3/13 Fife 0.682 0.000 0.	
30173 Cupar STW Upgrade WasteWater Base 0.000 0.000 1.371 11/3/12 31/3/13 Fife 1.371 0.001 0.000 0.068 0.385 0.918 0.0	5.68%
30174 Customer Requested Lead Pipe removal - SWW Water Quality 0.000 51.835 0.000 Scottish Water Wide 51.835 0.000 2.073 6.220 6.220 0.000 30175 Daer WTW - Upgrade Water Quality 0.000 0.391 19.181 107/08 31/3/10 South Lanarkshire 19.402 0.170 0.768 6.797 11.134 0.703 0.000 0.	
30175 Daer WTW - Upgrade Water Quality 0.000 0.391 19.181 10/7/08 31/3/10 South Lanarkshire 19.402 0.170 0.768 6.797 11.134 0.703 0.00 30176 DALBEATTIE STW Refurb WasteWater Base 0.000 0.000 0.757 12/5/09 31/3/10 Dumfries & Galloway 0.757 0.000 0.006 0.035 0.380 0.336 0.336	
30177 Dalchreichart WTW - Upgrade Water Quality 0.000 0.012 0.610 11/4/07 31/3/08 Highland 0.586 0.037 0.209 0.378 0.000 0.000 0.000	
30178 Dalderse STW - STC WasteWater Quality 0.000 0.000 11.900 10/7/12 31/3/14 Falkirk 11.900 0.000 0.	0.00%
30179 Dalderse STW Upgrade WasteWater Base 0.000 0.000 1.601 23/9/12 31/3/14 N/A 1.600 0.001 0.000 0.007 0.375 1.158 0.4 30180 Dalderse STW Upgrade WasteWater Quality 0.000 0.000 9.730 23/9/12 31/3/14 Falkirk 9.730 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00%
30180 Dalderse STW Upgrade WasteWater Quality 0.000 0.000 9.730 23/9/12 31/3/14 Falkirk 9.730 0.000 0.	0.00% 26.59%
30182 DALDOWIE STW Upgrade WasteWater Quality 0.000 0.000 24.859 107/12 31/3/14 Glasgow, City of 24.859 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00% 26.59% 0.00%
30183 Daldowie STW Upgrade WasteWater Quality 0.000 0.000 26.745 10/7/12 31/3/14 N/A 26.745 0.001 0.198 1.232 13.263 12.052 0.001	0.00% 26.59% 0.00% 0.00% 0.00%

		Canari	al Project Informat	lon							Fina	acial Informatio	n of Chosen Sce	unario.		Capital Ma	intenance
1	2	3	4	6	7		12	13	14	16	17	18	19	20	21	30	31
		Water or		leter IDE	Non IDE	Non John	Forecast /			Total Occur		Devices	Devices	Desired	Declarat		
		wastewater project		Infra - IRE	Non IRE Proportion of	Non - Infra Proportion of	Actual - Project,	Forecast / Actual -		Total Q&SIII Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1		£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
30184	Dalmally New WTW - Upgrade	Water	Quality	0.000	0.013	0.640	10/4/08	31/3/09	Argyll And Bute	0.653	0.000	0.038	0.219	0.396	0.000	0.000	0.00%
	DALMARNOCK STW - SCC	WasteWater	Quality	0.000			23/9/12		Glasgow City	7.363		0.000	0.000		0.000		0.00%
	DALMARNOCK STW Upgrade DALMELLINGTON STW Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000	42.514 0.460	10/6/12 28/6/09		Glasgow, City of East Ayrshire	42.514 0.460	0.000 0.000	0.000	0.000 0.019	0.000 0.059	0.000 0.382	0.000	0.00% 0.00%
	DALMENY STW Upgrade	WasteWater	Quality	0.000	0.000	1.358	25/12/11		Edinburgh, City of	1.358	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Dalmuir PFI STW Upgrade	WasteWater	Quality	0.000	0.000	31.806	10/6/12		West Dunbartonshire	31.806	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	DALSCONE STW (OLD) Refurb DALWHINNIE WTW - Completion	WasteWater Water	Base Quality	0.000	0.000	0.903 0.454	12/5/09	3 1/3/10	Dumfries & Galloway Scottish Water Wide	0.903 0.463	0.000 0.000	0.007 0.463	0.042 0.000	0.454 0.000	0.400 0.000	0.903 0.000	100.00% 0.00%
30192	DALWHINNIE WTW - Upgrade	Water	Quality	0.000	0.010	0.495	10/4/08	31/3/09	Scottish Water Wide	0.505	0.000	0.026	0.074	0.406	0.000	0.000	0.00%
	DEN OF LINDORES STW - Completion	WasteWater	Quality	0.000	0.000	0.467 0.518	11/3/13	24/2/44	Scottish Water Wide	0.467	0.000 0.000	0.467 0.000	0.000	0.000	0.000	0.000	0.00% 0.00%
	DENHOLM STW Upgrade DENNY STW - Completion	WasteWater WasteWater	Quality Quality	0.000			11/3/13	3 1/3/14	Borders, The Scottish Water Wide	0.518 0.163		0.163	0.000	0.000	0.000	0.000 0.000	0.00%
	DENNY STW Upgrade	WasteWater	Quality	0.000	0.000	4.143	22/11/12	31/3/14		4.143	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Dervaig WTW - Upgrade Development Constraints - Part 3 - Industrial/Commercial -	Water	Quality	0.000	0.003	0.163	28/7/13	31/3/14	Argyll And Bute	0.167	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Sewerage - SWW	WasteWater	Growth	0.000	29.589	0.000			Scottish Water Wide	29.589	0.000	1.340	4.111	4.209	4.333	0.000	0.00%
	Development Constraints - Part 3 - Industrial/Commercial - Water -																
	SWW Development Constraints - Part 3 Housing - Sewerage - SWW	Water WasteWater	Growth Growth	0.000	6.668 94.025	0.000			Scottish Water Wide Scottish Water Wide	6.668 94.025	0.000	0.302 4.257	0.927 13.064	0.949 13.374	0.977 13.770	0.000	0.00% 0.00%
	Development Constraints - Part 3 Housing - Sewerage - SWW	Water	Growth	0.000					Scottish Water Wide	11.165	0.000	0.506	1.551	1.588	1.635		
	Development Constraints - Part 4 Housing - WTW Capacities -																
30202	Development Constraints - Part 4 Housing - WWTW Capacities-	Water	Growth	0.000	1.098	53.796			Scottish Water Wide	54.894	0.000	2.745	8.234	8.234	8.234	0.000	0.00%
30203		WasteWater	Growth	0.000	0.000	160.730			Scottish Water Wide	160.730	0.000	8.036	24.109	24.109	24.109	0.000	0.00%
22224	Development Constraints - Part 4 Industrial/Commercial - WTW									40.400							
30204	Capacities - SWW Development Constraints - Part 4 Industrial/Commercial - WWTW -	Water	Growth	0.000	0.368	18.034			Scottish Water Wide	18.402	0.000	0.920	2.760	2.760	2.760	0.000	0.00%
30205		WasteWater	Growth	0.000	0.000	54.062			Scottish Water Wide	54.062	0.000	2.703	8.109	8.109	8.109	0.000	0.00%
	Development Constraints - Water Resources - SWW	Water	Growth	0.000	21.133		0.1.1.0.100	0.4.0.4.0	Scottish Water Wide	20.869	0.264	1.043	3.130	3.130	3.130	0.000	0.00%
	Dhu Loch WTW - Upgrade Dhu Loch WTW New & Old	Water Water	Quality Base	0.000 0.048	0.056 0.000	2.721 2.330	24/12/08 24/2/09		Argyll And Bute Argyll And Bute	2.777 2.377	0.000 0.001	0.112 0.000	0.505 0.124		0.081 1.694	0.000 2.377	0.00% 100.00%
	Diabeg WTW - Upgrade	Water	Quality	0.000	0.019		10/4/08		Highland	0.926	0.000	0.060	0.312		0.000	0.000	0.00%
	Dodburn WTW - Upgrade	Water	Quality	0.000	0.060		24/12/08		Scottish Borders	3.012	0.000	0.121	0.548		0.088	0.000	0.00%
	Dores WTW - Upgrade DORNOCH STW - SCC	Water WasteWater	Quality Quality	0.000	0.008		29/7/07 25/12/11		Highland Highland	0.365 2.022	0.020 0.000	0.056 0.000	0.309 0.000	0.000	0.000 0.000	0.000	0.00%
	DORNOCH STW Upgrade	WasteWater	Quality	0.000	0.000	3.786	22/11/12		Highland	3.786	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	DOUBLE HOUSES PIER SPS Refurb	WasteWater	Base	0.015			12/5/09		Scottish Water Wide	0.726	0.000	0.005	0.034		0.322		100.00%
	Dougliehill New WTW - Upgrade Drimnin WTW - Upgrade	Water Water	Quality Quality	0.008	0.051 0.009		24/12/08 28/7/08		Inverclyde Highland	2.995 0.456	0.000	0.175 0.027	0.923 0.153	1.897 0.277	0.001 0.000	0.423 0.000	14.11% 0.00%
30217	DRONGAN STW Refurb	WasteWater	Base	0.000	0.000	0.390			East Ayrshire	0.390	0.000	0.000	0.005	0.033	0.352	0.390	100.00%
	DRONGAN STW Upgrade Drumbeg WTW - Upgrade	WasteWater Water	Quality Quality	0.000	0.000	2.792 0.395	22/11/12 28/7/08		East Ayrshire Highland	2.792 0.403	0.000 0.000	0.000 0.020	0.000 0.059	0.000 0.324	0.000 0.000	0.000	0.00% 0.00%
	Drumelzier WTW - Upgrade	Water	Base	0.013		0.955	12/4/09		Scottish Borders	0.974		0.043	0.122		0.001	0.634	65.05%
	Drumfearn WTW - Upgrade	Water	Quality	0.005			10/4/08	31/3/09	Highland	0.788	0.033	0.192	0.373	0.223	0.000	0.264	32.19%
	DRYMEN STW EXTENSION - Completion Dual Manhole Removal - 290-318 High StreetLinlithgow	WasteWater WasteWater	Quality Quality	0.000				31/3/08	Scottish Water Wide West Lothian	0.570 0.039	0.000 0.000	0.570 0.000	0.000 0.039	0.000	0.000 0.000	0.000	0.00%
	Dual Manhole Removal - Churchill area Helensburgh	WasteWater	Quality	0.000					Argyll And Bute	0.055		0.000	0.055		0.000		
20005	Dual Manhole Removal - Churchill estate Helensburgh (ex MOD	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Overlite :	0.000	0.000	0.000		0.410.100	Annual Annual Duriti-	2.055	2.22	2 222	2 255	2.22	2.22	2 222	0.000
	housing) Dual Manhole Removal - Dreghorn - Monach Gardens	WasteWater WasteWater	Quality Quality	0.000					Argyll And Bute North Ayrshire	0.055 0.067	0.000 0.000	0.000	0.055 0.067	0.000	0.000 0.000	0.000 0.000	0.00% 0.00%
30227	Dual Manhole Removal - East Kilbride	WasteWater	Quality	0.000	0.118	0.000		31/3/08	South Lanarkshire	0.118	0.000	0.000	0.118	0.000	0.000	0.000	0.00%
	Dual Manhole Removal - Irvine - Tarryholme Estate	WasteWater	Quality	0.000					North Ayrshire	0.058	0.000	0.000	0.058		0.000	0.000	0.00%
	Dual Manhole Removal - Kilmarnock - Bunting Place Dual Manhole Removal - Kilmarnock - Loreny Ind. Estate	WasteWater WasteWater	Quality Quality	0.000					East Ayrshire East Ayrshire	0.021 0.023	0.000 0.000	0.000	0.021 0.023	0.000	0.000	0.000	0.00%
30231	Dual Manhole Removal - Kilmarnock - Wardneuk Estate	WasteWater	Quality	0.000	0.000	0.000		31/3/08	East Ayrshire	0.028	0.000	0.000	0.028	0.000	0.000	0.000	0.00%
	Dual Manhole Removal - Kilwinning - Woodmill Estate Dual Manhole Removal - Lenzie / Kirkintilloch	WasteWater WasteWater	Quality Quality	0.000					North Ayrshire Dumfries and Galloway	0.004 0.011	0.000 0.000	0.000	0.004 0.011		0.000 0.000	0.000	0.00%
	Dual Manhole Removal - Lower Largo	WasteWater	Quality	0.000		0.000		31/3/08		0.011		0.000	0.019		0.000		0.00%
30235	Dual Manhole Removal - Saltcoats - Dykesmain Estate	WasteWater	Quality	0.000	0.000	0.000		31/3/08	North Ayrshire	0.014	0.000	0.000	0.014	0.000	0.000	0.000	0.00%
	Dual Manhole Removal - Troon - Kenmore Housing Estate DULLATUR STW Upgrade	WasteWater WasteWater	Quality Quality	0.000				31/3/08	South Ayrshire North Lanarkshire	0.053 1.377	0.000 0.000	0.000	0.053 0.071		0.000 0.909	0.000 0.014	0.00% 1.03%
	DUNECHT STW Upgrade	WasteWater	Quality	0.000	0.000	0.592	11/3/13	31/3/14	Aberdeenshire	0.592		0.000	0.000	0.000	0.000		0.00%
30239	Dunfermline STW - Sludge Digestion	WasteWater	Quality	0.000	0.000	17.018	10/7/12	31/3/14		17.018	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	DUNNSWOOD STW Upgrade DUNNSWOOD STW Upgradeb	WasteWater WasteWater	Quality Quality	0.000			28/6/09 10/7/12		North Lanarkshire North Lanarkshire	0.439 11.462		0.000	0.018 0.000	0.056 0.000	0.365 0.000	0.000	0.00% 0.00%
		WasteWater	Quality	0.000	0.000	1.462			Dumfries & Galloway	1.462	0.000	0.000	0.076	0.422	0.964	0.008	0.52%
	DUNS STW Upgrade	WasteWater	Quality	0.000			24/12/12	31/3/14		2.172		0.000	0.000	0.000	0.000		0.00%
	Dunside WTW - Upgrade Durness New WTW - Upgrade	Water Water	Quality Quality	0.000			23/9/08 28/7/08		South Lanarkshire Highland	5.491 0.357		0.135 0.018	0.323 0.052		1.107 0.000		0.00% 0.00%
	EAGLESFIELD STW Upgrade	WasteWater	Quality	0.000			11/3/13		Dumfries & Galloway	0.612		0.000	0.000	0.000	0.000	0.000	0.00%
30247	EAGLESHAM STW Upgrade	WasteWater	Quality	0.000	0.000	2.303	24/12/12	31/3/14	East Renfrewshire	2.303	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
30248	EARLISH (UIG) WTW - Completion	Water	Quality	0.000	0.010	0.486			Scottish Water Wide	0.495	0.000	0.495	0.000	0.000	0.000	0.000	0.00%

											-						
	2	Gener	al Project Informat	on	7		12	13	14	16	17	ncial Informatio	n of Chosen Sce 19	nano 20	21	Capital Ma	31
-	-	- 3	4	0	-		12	13	14	10	1/	10	19	20	21	30	- 31
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
		project		Proportion of	Proportion of	Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014		Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	EARLISH (UIG) WTW - Upgrade	Water	Quality	0.000			28/7/13		Scottish Water Wide	0.317			0.000	0.000	0.000		
	D EAST LINTON STW Upgrade	WasteWater	Quality	0.000			24/12/12		East Lothian	1.603 6.858			0.000 0.444	0.000 4.971	0.000 1.277		
	1 Eela Water WTW - Upgrade 2 EKP Security - SWW	Water Water	Quality Quality	0.011			23/9/08	3 1/3/10	Shetland Islands Scottish water Wide	2.785			0.696	0.696	0.696		
	B Elgol WTW - Upgrade	Water	Base	0.012			12/4/09	31/3/10	Highland	0.859			0.302	0.490	0.001		
	4 ELLON STW Refurb	WasteWater	Base	0.000					Aberdeenshire	0.862		0.000	0.012	0.072	0.779		
	5 Elphin Ch Knockan WTW - Upgrade	Water	Quality	0.000			28/7/13	31/3/14	Highland	0.178		0.000	0.000	0.000	0.000		
3025	6 Emergency Tanker Fill Points - SWW	Water	Quality	0.000	8.453	0.000			N/A	8.453	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
3025	7 Enhancement of raw water intake and aqueduct security - SWW	Water	Quality	0.000	17.745	0.000			Scottish water Wide	17.745	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	B Enhancement of Security at chemical dosing points - SWW	Water	Quality	0.000					Scottish water Wide	1.856		0.464	0.464	0.464	0.464		
	Enhancement of Security at chlorine stores - SWW	Water	Quality	0.000					Scottish water Wide	2.797 16.884			0.699	0.699 4.221	0.699 4.221		
	D Enhancement of Service Reservoir Security - SWW 1 Enhancement of WTW Security - SWW	Water Water	Quality Quality	0.000					Scottish water Wide Scottish water Wide	23.810		0.000	4.221 0.000	0.000	0.000		
3026	EOROPIE ST Upgrade	WasteWater	Quality	0.000	0.000	3.612	24/11/08	31/3/10	Western Isles	3.612	0.000	0.124	0.413	2.752	0.322	0.000	0.00%
	3 ERISKAY WTW - Completion	Water	Quality	0.000				0.410.00	Scottish Water Wide	0.455			0.000	0.000	0.000		
	4 Ettrickbridge WTW - Upgrade 5 Fair Isle WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/08 29/7/07		Scottish Borders Shetland Islands	1.132 0.333		0.073 0.051	0.381 0.282	0.678 0.000	0.000		
	Fairmilehead WTW (Alternative) - Upgrade	Water	Quality	0.042			10/6/08		City of Edinburgh	28.663				16.742	0.962		
3026	7 Falkland WTW incl all Falkland BHs - Upgrade	Water	Quality	0.000	0.003	0.163	28/7/13	31/3/14	Fife	0.167	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	B FERNIEGAIR STW Upgrade	WasteWater	Quality	0.000			24/12/08		South Lanarkshire	1.400		0.071	0.392	0.913	0.023		
	9 Fetlar WTW - Upgrade D Finlas WTW - Upgrade New	Water Water	Quality Quality	0.000			28/7/13 24/1/08		Shetland Islands Argyll And Bute	0.268 2.233			0.000 0.752	0.000 1.337	0.000		
	Finmont SR [Glendevon WTW] - Upgrade	Water	Quality	0.105			10/7/08			19.965		0.822	6.597	12.008	0.537		
3027	2 FINTRY STW Upgrade	WasteWater	Quality	0.000	0.000	0.479	26/6/13	31/3/14	Stirling	0.479	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
2027	First Time Provision - Environmental Quality Sewerage FTP - Part			0.000	43.665	0.000			Coottiele Mateu Mide	42.005	0.000	2 020	11 700	11 700	44 700	0.000	0.000/
3027	3 3 - SWW First Time Provision - Environmental Quality Sewerage FTP - Part	WasteWater	Enhanced	0.000	43.000	0.000			Scottish Water Wide	43.665	0.000	3.930	11.790	11.790	11.790	0.000	0.00%
30274	4 4 - SWW	WasteWater	Enhanced	0.000	0.000	29.110			Scottish Water Wide	29.110	0.000	2.620	7.860	7.860	7.860	0.000	0.00%
	First Time Provision - Non Env Quality FTP Sewerage - Part 3 -																1
3027	5 SWW First Time Provision - Non Env Quality FTP Sewerage - Part 4 -	WasteWater	Enhanced	0.000	0.979	0.000			Scottish Water Wide	0.979	0.000	0.044	0.136	0.139	0.143	0.000	0.00%
3027	SWW	WasteWater	Enhanced	0.000	0.000	5.109			Scottish Water Wide	5.109	0.000	0.204	0.613	0.613	0.613	0.000	0.00%
3027	7 First Time Provision - Non Env Quality FTP Water - Part 3 - SWW	Water	Enhanced	0.000	0.876	0.000			Scottish Water Wide	0.876	0.000	0.040	0.122	0.125	0.128	0.000	0.00%
30278	B First Time Provision - Non Env Quality FTP Water - Part 4 - SWW	Water	Enhanced	0.000	0.080	3.931			Scottish Water Wide	4.011	0.000	0.160	0.481	0.481	0.481	0.000	0.00%
	Flex Farm Chlorinator Water Treatment Acreknowe WTW -			0.000	0.000	3.331					1.555	5.1.55	5.1.51	55		0.000	0.00%
	9 Upgrade	Water	Quality	0.000			28/7/13	31/3/14	Scottish Borders	0.168			0.000	0.000	0.000	0.000	
	D FORDYCE STW Upgrade 1 Forehill WTW - Upgrade	WasteWater Water	Quality Quality	0.000 0.169			10/6/08	31/3/10	Aberdeenshire Aberdeenshire	0.723 27.958			0.038 7.211	0.115 14.639	0.570 5.235		
	2 FORFAR NEW STW Upgrade	WasteWater	Quality	0.000			22/11/12			4.783		0.000	0.000	0.000	0.000		
30283	3 Fort Augustus WTW - Upgrade	Water	Quality	0.000			28/7/13		Highland	0.287		0.000	0.000	0.000	0.000		
	Fort William WTW - Upgrade	Water	Quality	0.000			23/9/08	31/3/10	Highland	6.157			0.362	4.402	1.242		
	FOULA WTW - Completion FOULA WTW - Upgrade	Water Water	Quality Quality	0.000			28/7/08	31/3/09	Scottish Water Wide Scottish Water Wide	0.105 0.371				0.000 0.298	0.000		
	7 FRIOCKHEIM NEW STW Upgrade	WasteWater	Quality	0.000			24/12/12			1.403			0.000	0.000	0.000		
	B Galashiels STW - STC	WasteWater	Quality	0.000	0.000		10/7/12	31/3/14	Scottish Borders	12.301			0.000	0.000	0.000		
	Galashiels STW Refurb Galashiels STW Upgrade	WasteWater WasteWater	Base Quality	0.000			25/12/11	24/2/42	Borders, The Borders, The	1.006 1.097		0.000	0.014 0.000	0.084 0.000	0.908 0.000		
	1 Gallowhill Banff WTW - Upgrade	Water	Quality	0.000			28/7/13		Aberdeenshire	0.369			0.000	0.000	0.000		
3029	2 Gartcarron WTW - Upgrade	Water	Quality	0.000	0.044	2.165	25/1/09	31/3/10	Stirling	2.210	0.000	0.017	0.150	0.941	1.101	0.000	0.00%
	3 GARTOCHARN STW Upgrade	WasteWater	Quality	0.000			24/12/12		West Dunbartonshire	1.353			0.000	0.000	0.000		
	4 Garve New WTW - Upgrade 5 Geocrab WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/08 23/9/08		Highland Western Isles	1.397 5.666				0.837 4.050	0.000 1.142		
	Gigha New WTW - Upgrade	Water	Quality	0.000			24/1/08		Argyll And Bute	1.576					0.000		
	7 GIS Upgrade for AC Pipe Management and Removal of AC Pipes B GLAMIS STW Upgrade	Water WasteWater	Quality Quality	0.000			11/3/13	31/3/14	Scottish Water Wide	4.159 0.601			0.260 0.000	0.260 0.000	0.260 0.000		
	9 GLASSFORD STW Upgrade	WasteWater	Quality	0.000			11/3/13		South Lanarkshire	0.522			0.000	0.000	0.000		
30300	Glassford WTW - Upgrade	Water	Quality	0.000	0.141	6.888	23/9/08		South Lanarkshire	7.029	0.000	0.173	0.414	5.025	1.417	0.000	0.00%
	1 GLEN OGIL WTW - Completion	Water	Quality	0.000					Scottish Water Wide	0.374				0.000	0.000		
	2 Glenachulish WTW - Upgrade 3 Glencoe STW Upgrade	Water WasteWater	Quality Quality	0.000			28/7/13	31/3/14	Highland Highland	0.284 2.367			0.000 0.123	0.000 0.683	0.000 1.561		
	Glencoe WTW - Upgrade	Water	Quality	0.000			28/7/08	31/3/09	Highland	0.432				0.347	0.000		
3030	Glendale WTW - Upgrade	Water	Quality	0.000	0.025	1.233	24/1/08	31/3/09	Highland	1.258	0.000	0.081	0.424	0.754	0.000	0.000	0.00%
	Glendye WTW - Upgrade	Water	Quality	0.000			24/1/08		Aberdeenshire	1.995				1.195	0.000		
	7 Glenfarq WTW - Upgrade 3 Glenfinnan WTW - Upgrade	Water Water	Quality Quality	0.075 0.000			10/7/08 28/7/13		Perth And Kinross Highland	11.407 0.263		0.203 0.000	0.621 0.000	6.499 0.000	4.085 0.000		
	Glengap WTW - Upgrade	Water	Quality	0.053			23/9/08		Dumfries And Galloway	5.542		0.255		4.054	0.084		
30310	Glenhove No 1 Water Pumping Station - Refurbishment	Water	Base	0.000	0.000	0.498	28/9/08		North Lanarkshire	0.498	0.000	0.010	0.067	0.420	0.000	0.498	100.00%
	1 GLENLATTERACH WTW - Completion	Water	Quality	0.000			04/40/00	2410440	Scottish Water Wide	0.007					0.000		
		Water WasteWater	Quality Quality	0.000			24/12/08 22/11/12		Scottish Water Wide Midlothian	2.950 2.543					0.086 0.000		
5551			,								. 0.000		. 0.000	0.000	0.000		2.0070

		Coner	al Project Informat	line							Fins	nelal Information	n of Chosen Sce	anda		Capital Ma	Internace
1	2	3	4	6	7		12	13	14	16	17	18	19	20	21	30	31
		Water or					Engage /									Describes of	December of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project				Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project	Project Title	(primary	Project Classification 1		Projects over £100k	Projects over £100k	Construction Start Date	Project, Beneficial Use Date	Local Authority	(2006 - 2014 inc)	Expenditure Pre 2006/07	Profile 2006/07	Profile 2007/08	Profile 2008/09	Profile 2009/10	Element of Project - £m	Element of
Autocode	Project rise	purpose)	Classification 1	E TOOK	LIVOR	LIVOK	Start Date	Late	Local Authority	100	P16 2000/07	2000/07	2007/06	200009	2009/10	Project - Em	Project - %
30314	Gourlaw WTW - Upgrade	Water	Quality	0.042	0.074	5.679	23/9/08	31/3/10	Midlothian	5.794	0.001	0.148	0.780	3.254	1.613	2.113	36.47%
30315	Govig WTW - Upgrade	Water	Quality	0.000	0.009	0.453	28/7/08	31/3/09	Western Isles	0.462	0.000	0.027	0.155	0.280	0.000	0.000	0.00%
	GREENGAIRS STW Upgrade GREENTOFT ST Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000		22/11/12 11/3/08		North Lanarkshire Orkney Islands	2.763 0.984	0.000	0.000 0.052	0.000 0.285	0.000 0.648	0.000	0.000	0.00%
30318	Gretna Service Station STW Refurb	WasteWater	Base	0.000	0.000	0.509	12/5/09	31/3/10	Dumfries & Galloway	0.509	0.000	0.004	0.024	0.256	0.226	0.509	100.00%
	Gretna Service Station STW Upgrade GUARDBRIDGE STW Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000		11/3/13 11/3/09	31/3/14 31/3/10	Dumfries & Galloway	0.551 0.941	0.000	0.000	0.000 0.050	0.000 0.150	0.000 0.741	0.000	0.00% 0.00%
30321	HADDINGTON STW Upgrade	WasteWater	Quality	0.000	0.000	4.102	22/11/12	31/3/14	East Lothian	4.102	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	HAWICK STW Upgrade Health & Safety Regulations - Asbestos - SWW	WasteWater Water	Quality Base	0.000	0.000		22/11/12	31/3/14	Borders, The Scottish Water Wide	3.913 4.673	0.000 0.349	0.000 0.435	0.000 0.435	0.000 0.431	0.000 0.979	0.000 5.022	0.00% 100.00%
30324	Health & Safety Regulations - Asbestos - SWW	WasteWater	Base	0.000	0.000	5.896			Scottish Water Wide	5.486	0.410	0.510	0.510	0.506	1.149	5.896	100.00%
	Health & Safety Regulations - Confined Spaces - SWW Health & Safety Regulations - Confined Spaces - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.241 0.283	0.018 0.021	0.067 0.079	0.048 0.056	0.048 0.056	0.053 0.063	0.259 0.304	100.00% 100.00%
30327	Health & Safety Regulations - COSHH - SWW	Water	Base	0.000	0.000	3.065			Scottish Water Wide	2.852	0.213	0.324	0.509	0.512	0.512	3.065	100.00%
30328	Health & Safety Regulations - COSHH - SWW	WasteWater	Base	0.000	0.000	3.598			Scottish Water Wide	3.348	0.250	0.381	0.597	0.601	0.601	3.598	100.00%
30329	Health & Safety Regulations - Display Screen Equipment - SWW	Water	Base	0.000	0.000	0.551			Scottish Water Wide	0.512	0.038	0.151	0.053	0.053	0.151	0.551	100.00%
30330	Health & Safety Regulations - Display Screen Equipment - SWW	WasteWater	Base	0.000	0.000	0.646			Scottish Water Wide	0.601	0.045	0.178	0.063	0.063	0.178	0.646	100.00%
30331	Health & Safety Regulations - Electricity - SWW	Water	Base	0.000	0.000	2.002			Scottish Water Wide	1.863	0.139	0.090	0.090	0.090	0.165	2.002	100.00%
	Health & Safety Regulations - Electricity - SWW Health & Safety Regulations - Manual Handling - SWW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	2.187 6.068	0.163 0.453	0.106 1.510	0.106 1.510	0.106 1.496	0.194 1.510	2.350 6.521	100.00% 100.00%
30334	Health & Safety Regulations - Manual Handling - SWW	WasteWater	Base	0.000	0.000	7.655			Scottish Water Wide	7.123	0.532	1.773	1.773	1.756	1.773	7.655	100.00%
	Health & Safety Regulations - Noise - SWW Health & Safety Regulations - Noise - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	4.585 5.382	0.343 0.402	1.125 1.321	1.146 1.345	1.136 1.334	1.116 1.310	4.927 5.784	100.00% 100.00%
30337	Health & Safety Regulations - Temporary Work at Height - SWW	vvater	Base	0.000	0.000	0.229			Scottish Water Wide	0.213	0.016	0.031	0.031	0.040	0.037	0.229	100.00%
	Health & Safety Regulations - Temporary Work at Height - SWW		Base	0.000	0.000				Scottish Water Wide	0.250	0.019	0.036	0.036	0.048	0.043	0.268	100.00%
	Health & Safety Regulations - Vibration - SWW Health & Safety Regulations - Vibration - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.151 0.177	0.011 0.013	0.008	0.012 0.014	0.033 0.038	0.033 0.038	0.162 0.191	100.00% 100.00%
30341	Health & Safety Regulations - Work Equipment - SWW	Water	Base	0.000	0.000	1.064			Scottish Water Wide	0.990	0.074	0.178	0.198	0.198	0.198	1.064	100.00%
	Health & Safety Regulations - Work Equipment - SWW Health & Safety Regulations - Workplace - SWW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	1.163 10.379	0.087 0.775	0.209 1.514	0.233 1.498	0.233 1.498	0.233 1.498	1.250 11.154	100.00% 100.00%
30344	Health & Safety Regulations - Workplace - SWW	WasteWater	Base	0.000	0.000	13.094			Scottish Water Wide	12.184	0.910	1.777	1.759	1.759	1.759	13.094	100.00%
	Herricks Keith WTW - Upgrade Hopes WTW - Upgrade	Water Water	Quality Quality	0.000	0.092 0.105		24/12/08 23/9/08		Moray East Lothian	4.596 5.258	0.000	0.185 0.129	0.836 0.309	3.442 3.759	0.134 1.060	0.000	0.00%
30347	HOWDEN SPS Refurb	WasteWater	Base	0.006	0.000	0.290	28/7/09	31/3/10	Scottish Water Wide	0.296	0.000	0.002	0.014	0.149	0.131	0.296	100.00%
	Howden WTW - Upgrade HUNTLY STW - SCC	Water WasteWater	Quality Quality	0.008	0.189 0.000		23/9/08 25/12/11		Scottish Borders Aberdeenshire	9.874 2.433	0.000	0.241 0.000	0.613 0.000	7.114 0.000	1.906 0.000	0.423 0.000	4.28% 0.00%
30350	Hushinish WTW - Upgrade	Water	Quality	0.000	0.009		28/7/08		Western Isles	0.438	0.000	0.026	0.147	0.265	0.000	0.000	0.00%
30351	Information Technology - Business Customer database - SWW	WasteWater	Base	0.000	0.000	0.255			Scottish Water Wide	0.255	0.000	0.000	0.196	0.000	0.029	0.255	100.00%
20252	Information Technology - Business Customer database - SWW	Water	Base	0.000	0.000	0 255			Scottish Water Wide	0 255	0 000	0.000	0.196	0.000	0.029	0.255	100.00%
		vvalei	Dase			5.23			Scottisti vvater vvide	3.200	0.000	0.000	0.196	0.000		0.255	100.00%
	Information Technology - Business Metering Technology - SWW Information Technology - Control Room Refresh - SWW	Water WasteWater	Base Base	0.590	0.000				Scottish Water Wide Scottish Water Wide	0.590 3.863	0.000	0.006 1.931	0.000	0.287 0.000	0.000	0.590 3.863	100.00% 100.00%
	Information Technology - Control Room Refresh - SWW	Water	Base	0.000	0.000				Scottish Water Wide	3.863	0.000			0.000	0.000	3.863	
30356	Information Technology - Core Applications Replacement - SWW	WasteWater	Base	0.000	0.000	19.134			Scottish Water Wide	19.134	0.000	0.526	0.000	8.149	7.270	19.134	100.00%
			Dusc														
	Information Technology - Core Applications Replacement - SWW Information Technology - Core Applications Upgrade - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	19.134 5.810	0.000	0.526 0.847	0.000 1.024	8.149 0.116	7.270 0.344	19.134 5.810	100.00% 100.00%
	Information Technology - Core Applications Upgrade - SWW	Water	Base	0.000	0.000				Scottish Water Wide	5.810	0.000			0.116	0.344	5.810	
30360	Information Technology - Data Centre Server Hardware Refresh - SWW	WasteWater	Base	0.000	0.000	4.672			Scottish Water Wide	4.672	0.000	0.000	2.193	0.000	0.000	4.672	100.00%
	Information Technology - Data Centre Server Hardware Refresh -																
	SWW Information Technology - Data Quality - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	4.672 2.806	0.000 1.057	0.000 0.802	2.193 0.601	0.000 0.401	0.000 0.200	4.672 3.863	100.00% 100.00%
30363	Information Technology - Data Quality - SWW	Water	Base	0.000	0.000	3.863			Scottish Water Wide	2.806	1.057	0.802	0.601	0.401	0.200	3.863	100.00%
	Information Technology - Data Warehouse - SWW Information Technology - Data Warehouse - SWW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	5.607 5.607	0.000	0.177 0.177	2.274 2.274	0.177 0.177	0.177 0.177	5.607 5.607	100.00% 100.00%
20266	Information Technology Decition Technology Refresh CIMM	MostoMotor	Page	0.000	0.000	1 021			Spottish Mater Mide	1 021	0.000	0.000	0.000	0.000	1 021	1 021	100.00%
30366	Information Technology - Desktop Technology Refresh - SWW	WasteWater	Base	0.000	0.000	1.931			Scottish Water Wide	1.931	0.000	0.000	0.000	0.000	1.931	1.931	100.00%
30367	Information Technology - Desktop Technology Refresh - SWW Information Technology - File and Printer Server Hardware	Water	Base	0.000	0.000	1.931			Scottish Water Wide	1.931	0.000	0.000	0.000	0.000	1.931	1.931	100.00%
30368	Maintenance - SWW	WasteWater	Base	0.000	0.000	3.496			Scottish Water Wide	3.496	0.000	0.437	0.437	0.437	0.437	3.496	100.00%
20200	Information Technology - File and Printer Server Hardware Maintenance - SWW	Water	Base	0.000	0.000	3.496			Scottish Water Wide	3.496	0.000	0.437	0.437	0.437	0.437	3.496	100.00%
30370	Information Technology - Mobile Workforce - SWW	WasteWater	Base	0.000	0.000	4.321			Scottish Water Wide	4.321	0.000	0.524	0.563	0.000	0.232	4.321	100.00%
30371	Information Technology - Mobile Workforce - SWW Information Technology - Network Capacity Upgrades - SWW	Water WasteWater	Base Base	0.000	0.000	4.321			Scottish Water Wide Scottish Water Wide	4.321 0.883	0.000 0.000	0.524 0.110	0.563 0.110	0.000 0.110	0.232 0.110	4.321 0.883	100.00% 100.00%
	Information Technology - Network Capacity Upgrades - SWW Information Technology - Network Capacity Upgrades - SWW	Water	Base	0.000	0.000				Scottish Water Wide	0.883	0.000	0.110		0.110	0.110	0.883	
	Information Technology - Network Technology Refresh - SWW	WasteWater	Base	0.000	0.000				Scottish Water Wide	3.863	0.000			1.931	1.104	3.863	100.00%
	Information Technology - Network Technology Refresh - SWW Information Technology - PC and Printer Renewal - SWW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	3.863 6.838	0.000	0.000 0.933	0.000 0.894	1.931 0.835	1.104 0.835	3.863 6.838	100.00% 100.00%
30377	Information Technology - PC and Printer Renewal - SWW	Water	Base	0.000	0.000	6.838			Scottish Water Wide	6.838	0.000	0.933	0.894	0.835	0.835	6.838	100.00%
30378	Information Technology - Smart Metering - SWW	Water	Base	0.711	0.000	0.000			Scottish Water Wide	0.711	0.000	0.158	0.003	0.003	0.379	0.711	100.00%

		Genera	al Project Informat	ion							Fina	ncial Informatio	n of Chosen Sce	enario.		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or		Infra - IRE	Non IDE	Non John	Forecast /			Total Q&SIII		Decinat	Desired	Desired	Designat	Proportion of	Proportion of
		wastewater project			Non IRE Proportion of	Non - Infra Proportion of	Actual – Project,	Forecast / Actual -		Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014		Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1		£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	•																
30379	Information Technology - Telephony Switch - SWW	WasteWater	Base	0.000	0.000	0.155			Scottish Water Wide	0.155	0.000	0.000	0.000	0.000	0.077	0.155	100.00%
	Information Technology - Telephony Switch - SWW	Water	Base	0.000	0.000				Scottish Water Wide	0.155		0.000	0.000	0.000	0.077		
	Information Technology - Work Flow - SWW Information Technology - Work Flow - SWW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	5.077 5.077	0.000	2.207 2.207	0.000 0.000	0.331 0.331	0.000 0.000	5.077 5.077	100.00% 100.00%
	Innerleithen WTW - Upgrade	Water	Quality	0.000	0.003		28/7/13	31/3/14	Scottish Borders	0.166	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	INSCH (NEW) STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/13		Aberdeenshire	0.729	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Internal Flooding - SWW	WasteWater	Enhanced	0.000	77.285				N/A	75.687	1.598	6.874	22.005	18.122	11.629	0.000	0.00%
	Internal Flooding- Removal of Emerging Problems - SWW Inveraray WTW - Upgrade	WasteWater Water	Growth Quality	22.413 0.015	33.620 0.041	0.000 2.730	25/12/07	21/2/00	Scottish Water Wide Argyll And Bute	56.033 2.786	0.000	0.000 0.163	0.000 0.773	0.000 1.850	0.000 0.000	22.413 0.740	40.00% 26.55%
	Inversidate New WTW - Opgrade	Water	Quality	0.000	0.034		24/1/08		Highland	1.723		0.103		1.032	0.000	0.000	0.00%
30389	Invercannie WTW - Upgrade	Water	Quality	0.106	0.523	30.816	10/6/08	31/3/10	Aberdeenshire	31.181	0.263	0.807	4.427	14.002	11.946	5.283	16.80%
	Invergarry WTW - Upgrade	Water	Quality	0.000	0.006		28/7/13	31/3/14	Highland	0.286	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	INVERMORISTON WTW - Completion INVERMORISTON WTW - Upgrade	Water Water	Quality Quality	0.000	0.008	0.389 0.318	28/7/08	31/3/NO	Scottish Water Wide Scottish Water Wide	0.397 0.324	0.000	0.397 0.016	0.000 0.047	0.000 0.261	0.000 0.000	0.000 0.000	0.00% 0.00%
	Inverness Loch Ashie WTW - Upgrade	Water	Quality	0.000	0.005		28/7/13		Highland	0.324	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
30394	INVERURIE STW Upgrade	WasteWater	Quality	0.000	0.000	4.599	23/11/11		Aberdeenshire	4.599	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	IPPC Schemes	WasteWater	Quality	0.000	0.000		05/40/44	24/2/42	Scottish Water Wide	9.357	0.000	2.339	2.339		2.339		0.00%
	JEDBURGH STW Upgrade JOPPA STW (COYLTON STW) Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000		25/12/11 22/11/12	31/3/13 31/3/14	N/A South Ayrshire	1.304 3.709	0.000	0.000	0.000 0.000	0.000 0.000	0.000 0.000	0.000	0.00% 0.00%
	Kaim New WTW - Upgrade	Water	Quality	0.000	0.112		23/9/08		Renfrewshire	5.588	0.000	0.137	0.329	3.995	1.127	0.000	0.00%
	KEITH STW Upgrade	WasteWater	Quality	0.000	0.000		25/12/11	31/3/13		1.433	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	KEMNEWAY STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/12		Aberdeenshire	0.589	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Kenmore Borehole WTW - Upgrade Kettlebridge WTW incl all BHs - Upgrade	Water Water	Quality Quality	0.000	0.003 0.003		28/7/13 28/7/13	31/3/14	Perth And Kinross	0.170 0.167	0.000	0.000	0.000	0.000 0.000	0.000	0.000	0.00% 0.00%
	Kettleton WTW - Upgrade	Water	Quality	0.000	0.105		23/9/08		Dumfries And Galloway	5.239		0.129	0.308	3.746	1.057	0.000	0.00%
	Kilberry WTW - Upgrade	Water	Quality	0.000	0.006		28/7/08		Argyll And Bute	0.299	0.000	0.015	0.044		0.000	0.000	0.00%
	Kilchoan WTW - Upgrade KILLEARN STW Upgrade	Water WasteWater	Quality Quality	0.000	0.024 0.000		24/1/08 22/11/12	31/3/09 31/3/14	Highland Stirling	1.189 2.599	0.000	0.077 0.000	0.400 0.000	0.712 0.000	0.000 0.000	0.000	0.00% 0.00%
	Killiecrankie WTW - Upgrade	Water	Quality	0.000	0.000		24/1/08		Perth And Kinross	2.123	0.000	0.137	0.714		0.000	0.000	0.00%
30408	Killylour WTW - Upgrade	Water	Quality	0.105	0.121	11.092	10/7/08	31/3/10	Dumfries And Galloway	11.317	0.002	0.389	1.802	7.900	1.226	5.262	46.49%
	Kilmaluaq WTW - Upgrade	Water	Quality	0.000	0.014		10/4/08		Highland	0.704		0.041	0.236		0.000	0.000	0.00%
	Kilmelford WTW - Upgrade Kilmuir WTW - Upgrade	Water Water	Quality Quality	0.000	0.021 0.019		24/1/08 10/4/08		Argyll And Bute Highland	1.070 0.939	0.000	0.069 0.055	0.360 0.315	0.641 0.570	0.000 0.000	0.000	0.00% 0.00%
	KINGUSSIE STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/13		Highland	0.910	0.000	0.000	0.000		0.000	0.000	0.00%
	Kinlochbervie WTW - Upgrade	Water	Quality	0.000	0.034		24/1/07		Highland	1.572		0.566	1.006		0.000	0.000	0.00%
	Kinlochbervie WTW/Depot - Refurbishment	Water	Base	0.021	0.000		24/2/09		Highland	1.056	0.000	0.043	0.121		0.001	1.057	100.00%
	Kinlochewe WTW - Upgrade Kinlochleven STW Upgrade	Water WasteWater	Quality Quality	0.000	0.006 0.000		29/7/07 11/3/09		Highland Highland	0.269 0.874	0.015 0.000	0.041 0.000	0.228 0.046	0.000 0.139	0.000 0.688	0.000	0.00% 0.00%
	Kinlochleven WTW - Upgrade	Water	Quality	0.000	0.006		28/7/08		Highland	0.284	0.000	0.017	0.095	0.172	0.000	0.000	0.00%
	Kinloss STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/09	31/3/10		0.613	0.000	0.000	0.033		0.483	0.000	0.00%
	Kinnesswood WTW incl all 3 BHs - Upgrade Kirbister WTW - Upgrade	Water Water	Quality Quality	0.000 0.042	0.011 0.087	0.560 6.316	10/4/08 23/9/08		Perth And Kinross Orkney Islands	0.571 6.444	0.000 0.001	0.034 0.217	0.191 0.752	0.346 4.602	0.000 0.873	0.000 2.113	0.00% 32.79%
	KIRKCONNEL STW Refurb	WasteWater	Base	0.000	0.000		12/5/09		Dumfries & Galloway	0.592		0.004	0.028	0.298	0.263		100.00%
	KIRKCOWAN STW Refurb	WasteWater	Base	0.000	0.000		12/5/09		Scottish Water Wide	0.586	0.000	0.004	0.027	0.295	0.260		100.00%
	KIRKCUDBRIGHT STW Refurb	WasteWater	Base	0.000	0.000		20.77.02		Dumfries & Galloway	0.302							
	Kirkmichael WTW - Upgrade KIRRIEMUIR STW Upgrade	Water WasteWater	Quality Quality	0.000	0.003 1.473		28/7/08 24/11/08		Perth And Kinross Scottish Water Wide	0.137 4.462		0.007 0.043	0.020 0.206		0.000 2.808	0.000 0.000	0.00% 0.00%
	Kyle Of Lochalsh WTW - Upgrade	Water	Quality	0.000	0.004		28/7/13		Highland	0.183		0.000	0.000	0.000	0.000	0.000	0.00%
	KYLESKU WTW - Completion	Water	Quality	0.000	0.008		AC		Scottish Water Wide	0.388	0.000	0.388	0.000	0.000	0.000	0.000	0.00%
	KYLESKU WTW - Upgrade Laggan Bridge WTW - Upgrade	Water Water	Quality Quality	0.000	0.009 0.005		28/7/08 28/7/13		Scottish Water Wide Highland	0.462 0.253	0.000	0.023 0.000	0.067 0.000	0.371 0.000	0.000 0.000	0.000	0.00% 0.00%
	LAID WTW - Completion	Water	Quality	0.000	0.005		201113	3 1/3/ 14	Scottish Water Wide	0.293	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
30431	LAID WTW - Upgrade	Water	Quality	0.000	0.007	0.359	28/7/08	31/3/09	Scottish Water Wide	0.366	0.000	0.019	0.053	0.294	0.000	0.000	0.00%
	LANAPIK (PAISLEY) STW Upgrade	WasteWater	Quality	0.000	0.000		4410110	0.410.110	Renfrewshire	4.238	0.001	0.027	0.148		3.067	1.463	34.51%
	LANARK STW - SCC LANARK STW Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000		11/3/12 22/11/12		South Lanarkshire South Lanarkshire	0.601 3.835	0.000	0.000	0.000 0.000	0.000	0.000 0.000	0.000	0.00% 0.00%
	Landfill Directive	WasteWater	Quality	0.000	0.000		24/11/08		Scottish Water Wide	3.535		0.884	0.884		0.884		0.00%
30436	LANGHOLM STW Upgrade	WasteWater	Quality	0.000	0.000	2.497	24/12/08	31/3/10	N/A	2.496	0.000	0.003	0.130	0.813	1.550	0.407	16.29%
	Langholm WTW - Upgrade	Water	Quality	0.000	0.046		24/1/08		Dumfries And Galloway	2.298	0.000	0.148	0.773		0.000	0.000	0.00%
	Laurencekirk STW Upgrade LEADHILLS STW Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000	0.937 2.544	11/3/13 23/11/11		Aberdeenshire South Lanarkshire	0.937 2.544	0.000	0.000	0.000 0.000	0.000	0.000 0.000	0.000 0.000	0.00% 0.00%
	Lemreway WTW - Upgrade	Water	Quality	0.000	0.008	1.395	24/1/08		Western Isles	1.423		0.092	0.479		0.000	0.000	0.00%
30441	LETHAM STW Upgrade	WasteWater	Quality	0.000	0.000	2.579	22/11/12	31/3/14	N/A	2.579	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Leurbost East STW Upgrade	WasteWater	Quality	0.000	0.000		25/12/07		Western Isles	1.475	0.000	0.077	0.427		0.000		0.00%
30443	Leurbost West STW Upgrade	WasteWater	Quality	0.000	0.000	2.337	25/12/07	31/3/09	Western Isles	2.337	0.000	0.123	0.676	1.538	0.000	0.000	0.00%

		Genera	l Project Informat	ion							Fina	ncial Informatio	n of Chosen Scr	mario		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014		Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Project - %
	LINLITHGOW STW - Completion	WasteWater	Quality	0.000	0.000		11/3/12	21/2/12	Scottish Water Wide West Lothian	0.163				0.000	0.000		
	LINLITHGOW STW - SCC LINLITHGOW STW Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000		22/11/12		West Lothian	0.601 3.466	0.000			0.000 0.000	0.000 0.000	0.000 0.000	
30447	Lintrathen WTW - Upgrade	Water	Quality	0.023	0.118	6.938	23/9/08	31/3/10		7.080	0.000	0.206	0.620	5.059	1.195	1.156	16.33%
	Loch Ascog WTW - Upgrade	Water	Quality	0.000	0.127		23/9/08		Argyll And Bute	6.354	0.000				1.281	0.000	
	Loch Calder WTW - Refurbishment Loch Eck High Lift Pumps - Refurbishment	Water Water	Base Base	0.032 0.000	0.000 0.000		24/2/09 12/5/09		Highland Argyll & Bute	1.584 0.755	0.001 0.000			0.373 0.636	1.129 0.001	1.585 0.755	
30451	Loch Eck Intake - Refurbishment	Water	Base	0.000	0.000	0.537	12/5/08	31/3/09	Argyll & Bute	0.537	0.000	0.022		0.453	0.000	0.537	100.00%
	Lochaline WTW - Upgrade	Water	Quality	0.000	0.006		28/7/13		Highland	0.278	0.000			0.000	0.000	0.000	
	Lochcarron WTW - Upgrade Lochearnhead WTW - Upgrade	Water Water	Quality Quality	0.000	0.008 0.004	0.409 0.174	28/7/08 28/7/08	31/3/09	Highland Stirling	0.417 0.177	0.000			0.335 0.142	0.000 0.000	0.000 0.000	
	LOCHEND WTW - Completion	Water	Quality	0.000	0.008	0.369		0 1,0100	Scottish Water Wide	0.377				0.000	0.000	0.000	
	LOCHEND WTW - Upgrade	Water	Quality	0.000	0.005		28/7/08		Scottish Water Wide	0.269	0.000			0.163	0.000	0.000	
	Lochenkit WTW - Upgrade Lochgilphead STW - Sludge Digestion	Water WasteWater	Quality Quality	0.021 0.000	0.043 0.000	3.128 7.712	25/12/07 23/9/12		Dumfries And Galloway Argyll & Bute	3.191 7.712	0.000			2.171 0.000	0.000 0.000	1.057 0.000	
	Lochqoilhead WTW - Upgrade	Water	Quality	0.000	0.000		28/7/08		Argyll And Bute	0.158	0.000			0.127	0.000	0.000	
30460	Lochinvar New WTW - Upgrade	Water	Quality	0.000	0.059	2.914	24/12/08		Dumfries And Galloway	2.974	0.000	0.120	0.541	2.227	0.087	0.000	0.00%
	LOCHINVER WTW - Completion LOCHINVER WTW - Upgrade	Water Water	Quality Quality	0.000	0.012 0.012		10/4/08	31/3/09	Scottish Water Wide Scottish Water Wide	0.609 0.599	0.000			0.000 0.363	0.000 0.000	0.000 0.000	
	LOCHMABEN STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/12		Dumfries & Galloway	0.590	0.000			0.000	0.000	0.000	
	Lochmaddy WTW - Upgrade	Water	Quality	0.000	0.072		24/12/08		Western Isles	3.624	0.000			2.714	0.105	0.000	
	Lochranza WTW - Upgrade LOCHWINNOCH STW Upgrade	Water WasteWater	Quality Quality	0.000	0.007 0.000	0.332 0.862	28/7/08 11/3/12		North Ayrshire Renfrewshire	0.339 0.862	0.000			0.272 0.000	0.000 0.000	0.000 0.000	
	LOCKERBIE STW Upgrade	WasteWater	Quality	0.000	0.000		11/3/12		Dumfries & Galloway	0.553	0.000			0.000	0.000	0.000	
	Logistics - Plant Replacement - NE	Water	Base	0.000	0.000				Scottish Water Wide	0.377	0.000			0.068	0.117	0.377	100.00%
	Logistics - Plant Replacement - NE Logistics - Plant Replacement - NW	WasteWater Water	Base Base	0.000	0.000	0.443 0.317			Scottish Water Wide Scottish Water Wide	0.443 0.317	0.000			0.079 0.057	0.138 0.099	0.443 0.317	
	Logistics - Plant Replacement - NW	WasteWater	Base	0.000	0.000	0.372			Scottish Water Wide	0.372				0.067	0.116		
	Logistics - Plant Replacement - SE	Water	Base	0.000	0.000	0.287			Scottish Water Wide	0.287	0.000	0.002	0.063	0.051	0.089	0.287	100.00%
	Logistics - Plant Replacement - SE	WasteWater	Base	0.000	0.000	0.337			Scottish Water Wide	0.337	0.000				0.105	0.337	
	Logistics - Plant Replacement - SW Logistics - Plant Replacement - SW	Water WasteWater	Base Base	0.000	0.000 0.000				Scottish Water Wide Scottish Water Wide	0.528 0.620	0.000			0.095 0.111	0.164 0.193	0.528 0.620	
	Logistics - Vehicle Replacement - NE	Water	Base	0.000	0.000	4.686			Scottish Water Wide	4.528	0.158	0.752	0.129	0.243	0.388	4.686	
	Logistics - Vehicle Replacement - NE	WasteWater	Base	0.000	0.000				Scottish Water Wide	5.316					0.456	5.501	100.00%
	Logistics - Vehicle Replacement - NW Logistics - Vehicle Replacement - NW	Water WasteWater	Base Base	0.000	0.000 0.000				Scottish Water Wide Scottish Water Wide	3.804 4.465	0.133 0.156			0.204 0.240	0.326 0.383	3.936 4.621	100.00% 100.00%
	Logistics - Vehicle Replacement - SE	Water	Base	0.000	0.000	3.561			Scottish Water Wide	3.441	0.120			0.185	0.295	3.561	100.00%
	Logistics - Vehicle Replacement - SE	WasteWater	Base	0.000	0.000				Scottish Water Wide	4.040					0.346		100.00%
	Logistics - Vehicle Replacement - SW Logistics - Vehicle Replacement - SW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	6.339 7.442	0.221 0.260			0.340 0.400	0.543 0.638	6.561 7.702	100.00% 100.00%
	Logistics - Vehicle telematics Installation/Upgrade - NW	Water	Base	0.000	0.000				Scottish Water Wide	0.064	0.000			0.008	0.011	0.064	
	Logistics - Vehicle telematics Installation/Upgrade - NW	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.075	0.000			0.009	0.013	0.075	
	Logistics - Vehicle telematics Installation/Upgrade - SE Logistics - Vehicle telematics Installation/Upgrade - SE	Water WasteWater	Base Base	0.000	0.000 0.000				Scottish Water Wide Scottish Water Wide	0.058 0.068	0.000			0.007 0.008	0.010 0.012		
	Logistics - Vehicle telematics installation/Upgrade - SU	Water	Base	0.000	0.000	0.107			Scottish Water Wide	0.107	0.000	0.005	0.001	0.013	0.019	0.107	100.00%
	Logistics - Vehicle telematics Installation/Upgrade - SW	WasteWater	Base	0.000	0.000	0.125			Scottish Water Wide	0.125				0.015	0.022		100.00%
	Logistics - Vehicle telematics Installation/Upgrade -NE Logistics - Vehicle telematics Installation/Upgrade -NE	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.076 0.090	0.000			0.009 0.011	0.013 0.016		
30492	Lomond Hills WTW - Upgrade	Water	Quality	0.042	0.104	7.189	23/9/08	31/3/10	Fife	7.335	0.001			5.414		2.113	
	Londornoch WTW Dornoch - Upgrade	Water	Quality	0.000	0.090		24/12/08	31/3/10	Highland	4.475	0.000				0.130		
	Low Pressure - SWW Lumsden WTW - Upgrade	Water Water	Enhanced Quality	0.000	14.306 0.007	0.000 0.336	28/7/08	31/3/09	Scottish Water Wide Aberdeenshire	14.306 0.342	0.000				1.717 0.000	0.000 0.000	
	LUTHERMUIR ST Upgrade	WasteWater	Quality	0.000	0.000	1.126	25/12/11		Aberdeenshire	1.126				0.000	0.000	0.000	
	Maaruiq WTW - Upgrade	Water	Quality	0.000	0.006		28/7/08	31/3/09	Western Isles	0.314	0.000				0.000	0.000	0.00%
	Mains rehab - Afton WOA Mains rehab - Amlaird WOA	Water Water	Quality Quality	0.000	6.480 1.743				East Ayrshire East Ayrshire	6.480 1.743				0.000 0.000	0.000 0.000	0.000 0.000	
	Mains rehab - Bradan WOA	Water	Quality	0.000	15.004				South Ayrshire	13.737					0.000		
30501	Mains rehab - Camphill WOA	Water	Quality	0.000	3.776	0.000			North Ayrshire	3.142	0.634	1.571	1.571	0.000	0.000	0.000	0.00%
	Mains rehab - Castlehill WOA Mains rehab - Invercannie & Mannofield WOA	Water Water	Quality Quality	0.000	0.854 5.795				North Ayrshire Aberdeen, City Of	0.431 4.844	0.423 0.951				0.000 0.000	0.000 0.000	
	Mains rehab - Penwhirn WOA	Water	Quality	0.000	1.380				Dumfries And Galloway	1.380	0.951			0.000	0.000	0.000	
30505	Mallaiq New WTW - Upgrade	Water	Quality	0.000	0.016	0.777	10/4/08	31/3/09	Highland	0.793	0.000	0.047	0.265	0.481	0.000	0.000	0.00%
	Mannofield No.1 Water Pumping Station - Refurbishment	Water	Base	0.000	0.000		12/5/08		City of Aberdeen	0.534				0.450			
	Mannofield No2 Water Pumping Station - Refurbishment Mannofield WTW (Alternative) - Upgrade	Water Water	Base Quality	0.000 0.021	0.000 0.474		12/5/09 10/7/08		City of Aberdeen City of Aberdeen	0.584 24.529				0.492 14.362	0.001 0.850	0.584 1.057	
					•			2 37 10	,		00				2.500		

		Conce	I Project Informat	tion							Cina	noisi Informatio	n of Chosen Sce	nario.		Capital Ma	aintenance
	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or		Info IDE	Non IDE	Non John	Forecast /			Total ORCHI		Desirat	Devices	Desired	Desirat		Proportion of
		wastewater project		Infra - IRE	Non IRE Proportion of	Non - Infra Proportion of	Actual - Project,	Forecast / Actual -		Total Q&SIII Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1		£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	Manse Street Galashiels Water WTW - Upgrade	Water	Quality	0.000	0.053	2.609	24/12/08		Scottish Borders	2.663	0.000		0.484	1.994			
	Marchbank WTW - Upgrade MAUCHLINE STW Upgrade	Water	Quality Quality	0.005 0.000	0.485 0.000	23.975 1.855	10/7/08 24/12/12		Edinburgh, City Of East Avrshire	24.253 1.855	0.211 0.000		8.446	13.982 0.000		0.236 0.000	
	MAULDSLIE (CARLUKE) STW Upgrade	WasteWater WasteWater	Quality	0.000	0.000	7.293	23/9/12		South Lanarkshire	7.293	0.000		0.000 0.000	0.000		0.000	
	Maybole STW Upgrade	WasteWater	Quality	0.000	0.000	0.606	11/3/09		South Ayrshire	0.606	0.000		0.032	0.096		0.000	0.00%
	MEADOWHEAD INLET WORKS STW Refurb	WasteWater	Base	0.000		2.223	24/2/09		North Ayrshire	2.222	0.001		0.104	1.116			
	MEADOWHEAD W.W.T. SERVICE (PFI STW) Upgrade Meadowhead/Stevenston/Inverciyde - STC	WasteWater WasteWater	Quality Quality	0.000	0.000	15.122 8.304	10/7/08 23/9/08		North Ayrshire North Ayrshire	15.122 8.304	0.000		0.756 0.355			0.000 0.000	
	MEAVAIG WTW - Completion	Water	Quality	0.000		0.364	23/3/00	31/3/10	Scottish Water Wide	0.372	0.000		0.000				
	MEAVAIG WTW - Upgrade	Water	Quality	0.000		0.558	10/4/08		Scottish Water Wide	0.570	0.000		0.191	0.346		0.000	0.00%
	MEIGLE STW Upgrade	WasteWater	Quality	0.000	0.000	0.694	11/3/13		Perth & Kinross	0.694	0.000		0.000	0.000			
	Melness West Strathan WTW - Upgrade Meter Installation - SWW	Water Water	Quality Growth	0.000	0.035 1.643	1.729 0.000	24/1/08	ა 1/ა/09	Highland Scottish Water Wide	1.765 1.643	0.000		0.594 0.197	1.057 0.197		0.000 0.000	
	Meter Maintenance - SWW	Water	Base	14.096	0.000	0.000			Scottish Water Wide	14.096	0.000		1.692	1.692			
30523	METHVEN STW Upgrade	WasteWater	Quality	0.000	0.000	0.828	11/3/13		Perth & Kinross	0.828	0.000		0.000	0.000	0.000	0.000	0.00%
	Mid Yell WTW - Upgrade MILTON NEW ST Upgrade	Water WasteWater	Quality Quality	0.000	0.027 0.000	1.305 1.872	24/1/08 25/12/07		Shetland Islands West Dunbartonshire	1.331 1.872	0.000		0.448 0.542	0.797 1.232		0.000 0.000	
	Minor Sewer Collapse - NE	WasteWater	Base	15.295	0.000	0.000	23/12/07	3 1/3/03	Scottish Water Wide	15.291	0.004		1.908	1.908		15.295	
	Minor Sewer Collapse - NW	WasteWater	Base	4.024	0.000	0.000			Scottish Water Wide	4.023	0.001		0.502	0.502			
	Minor Sewer Collapse - SE	WasteWater	Base	19.613	0.000	0.000			Scottish Water Wide	19.608	0.005		2.447	2.447			
	Minor Sewer Collapse - SW Moffat Borehole Chapelhill WTW - Upgrade	WasteWater Water	Base Quality	18.390	0.000	0.000 0.164	28/7/13	24/2/44	Scottish Water Wide Dumfries And Galloway	18.385	0.005 0.000		2.294 0.000	2.294 0.000		18.390 0.000	
	Motherwell (Carbarns) STW Refurb	WasteWater	Base	0.000	0.003	1.654	24/2/09		North Lanarkshire	0.167 1.653	0.000		0.000	0.830			
	Motherwell (Carbarns) STW Upgrade	WasteWater	Quality	0.000		23.620	10/7/12		North Lanarkshire	23.620	0.000		0.000	0.000			
	Muirlands School WTW - Upgrade	Water	Quality	0.000	0.073	3.553	24/12/08	31/3/10		3.626	0.000		0.659	2.715		0.000	
	Neilston New WTW - Upgrade NEILSTON STW Upgrade	Water WasteWater	Quality Quality	0.011 0.000	0.043 0.000	2.618 4.802	25/12/07 22/11/12		East Renfrewshire East Renfrewshire	2.671 4.802	0.000		0.792 0.000	1.729 0.000			
	Ness WTW - Upgrade	Water	Quality	0.000		3.869	24/12/08		Western Isles	3.948	0.000		0.718				
	NETHERBURN STW Upgrade	WasteWater	Quality	0.000	0.000	1.527	24/12/12	31/3/14	South Lanarkshire	1.527	0.000		0.000	0.000	0.000	0.000	0.00%
	NEW CUMNOCK STW Refurb	WasteWater	Base	0.000		1.120	24/2/09		East Ayrshire	1.119	0.000		0.052	0.562			
	NEW CUMNOCK STW Upgrade NEW LANARK No 2 ST Upgrade	WasteWater WasteWater	Quality Quality	0.000	0.000	2.667 0.327	22/11/12 28/6/09		East Ayrshire South Lanarkshire	2.667 0.327	0.000		0.000 0.014	0.000 0.042			
	Newburgh WTW - Upgrade	Water	Quality	0.014		2.427	24/1/08	31/3/09		2.476	0.000		0.681	1.652			
	Newcastleton WTW - Upgrade	Water	Quality	0.000	0.003	0.161	28/7/13		Scottish Borders	0.164	0.000		0.000	0.000			
	NEWMACHAR STW Upgrade	WasteWater	Quality	0.000		0.707	11/3/13		Aberdeenshire	0.707	0.000		0.000	0.000		0.000	
30544	Newmore WTW - Upgrade	Water	Quality	0.000	0.069	3.382	24/12/08	3 1/3/10	Highland	3.451	0.000	0.139	0.627	2.584	0.100	0.000	0.00%
30545	Newton Of Lathrisk Boreholes (incl Knowehead) - Refurbishment	Water	Base	0.013	0.000	0.621	12/5/09	31/3/10	Fife	0.634	0.000	0.000	0.026	0.073	0.535	0.634	100.00%
225.12							404400	0.410.100	=				2017				
	Newton Of Lathrisk Boreholes incl Knowehead WTW - Upgrade NEWTON STEWART STW Upgrade	Water WasteWater	Quality Base	0.000	0.013 0.000	0.634 0.169	10/4/08	31/3/09	Dumfries & Galloway	0.647 0.169	0.000		0.217 0.002	0.392 0.014	0.000 0.153	0.000 0.169	
	NEWTONMORE STW Upgrade	WasteWater	Quality	0.000	0.000	1.506	24/12/12	31/3/14		1.506	0.000		0.033	0.098			
30549	NEWTYLE STW Upgrade	WasteWater	Quality	0.000	0.000	0.356	28/6/09	31/3/10		0.356	0.000	0.000	0.015	0.045		0.000	0.00%
	North Ballachulish STW Upgrade	WasteWater	Quality	0.000	0.000	0.909	11/3/09		Highland Western Jales	0.909	0.000		0.048	0.145		0.000	
	North Lochs Orosay WTW - Upgrade NORTH RONALDSAY WTW - Completion	Water Water	Quality Quality	0.000		6.404 0.000	23/9/08	31/3/10	Western Isles Scottish Water Wide	6.535 0.052	0.000		0.385 0.000	4.672 0.000			
	NORTH RONALDSAY WTW - Upgrade	Water	Quality	0.000	0.006	0.307	28/7/08	31/3/09	Scottish Water Wide	0.313	0.000		0.046				
	OBAN STW Refurb	WasteWater	Base	0.000	0.000	0.351			Scottish Water Wide	0.351	0.000	0.000	0.005	0.029	0.316	0.351	100.00%
	Odour management - SWW OLDMELDRUM STW Upgrade	WasteWater	Enhanced	0.000		47.861 0.771	11/3/13	24/2/44	Scottish Water Wide Aberdeenshire	47.702 0.771	0.158 0.000		5.724	5.724			
	One-off Targeted Prioritised Programme of Mains Cleaning	WasteWater Water	Quality Quality	0.000	0.000 2.920	0.771	11/3/13	S 1/3/14	Scottish Water Wide	2.920	0.000		0.000 0.365	0.000 0.365			
30558	ORMISTON STW Upgrade	WasteWater	Quality	0.000		1.335	24/12/12	31/3/14	East Lothian	1.335	0.000		0.000	0.000			
	OSEDALE / DUNVEGAN WTW - Completion	Water	Quality	0.000	0.013	0.622			Scottish Water Wide	0.635	0.000	0.635	0.000	0.000	0.000	0.000	0.00%
	OSEDALE / DUNVEGAN WTW - Upgrade Outfall Capital Maintenance - NE	Water WasteWater	Quality Base	0.000 1.270		1.049 0.000	24/1/08	31/3/09	Scottish Water Wide Scottish Water Wide	1.071 1.267	0.000 0.003		0.360 0.123	0.641 0.123			
	Outfall Capital Maintenance - NW	WasteWater	Base	0.334		0.000			Scottish Water Wide	0.333	0.003		0.123				
30563	Outfall Capital Maintenance - SE	WasteWater	Base	1.629	0.000	0.000			Scottish Water Wide	1.625	0.004	0.158	0.158	0.158	0.158	1.629	100.00%
	Outfall Capital Maintenance - SW	WasteWater	Base	1.527	0.000	0.000	04/40/00	0410110	Scottish Water Wide	1.524	0.003		0.148				
	Overton Alexandria WTW - Upgrade Overton Greenock WTW - Upgrade	Water Water	Quality Quality	0.000		3.900 4.156	24/12/08 24/12/08		West Dunbartonshire Inverclyde	3.979 4.241	0.000		0.723 0.771	2.980 3.176			
	Oykel Bridge WTW - Upgrade	Water	Quality	0.000		1.995	25/1/09		Highland	2.036	0.000		0.370	1.525			
30568	Palnure Bardrochwood WTW - Upgrade	Water	Quality	0.000	0.062	3.028	24/12/08	31/3/10	Dumfries And Galloway	3.090	0.000	0.124	0.562	2.314	0.090	0.000	0.00%
	Papa Stour WTW - Upgrade	Water	Base	0.012		1.094	24/1/08		Shetland Islands	1.116	0.000		0.246				
	Pateshill WTW - Upgrade PATHHEAD STW Upgrade	Water WasteWater	Quality Quality	0.059 0.000		7.593 1.631	23/9/08 24/12/12		West Lothian Midlothian	7.747 1.631	0.001 0.000		1.685 0.000	5.593 0.000			
30371				0.000		1.333	24/12/12		East Lothian	1.333	0.000		0.000				
	PENCAITLAND STW Upgrade	WasteWater	Quality	0.000	0.000	1.333	24/12/12	3 1/3/14	East Lottilati	1.333	0.000	0.000	0.000	0.000	0.000	0.000	

R – Removed from plan due to errors or duplication.

		Genera	l Project Informat	tion							Fina	ncial Informatio	n of Chosen Scr	mario		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or					Engaged /									Deposition of	Deposition of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	I				1				I								
	Penifiler WTW - Upgrade Peninver WTW - Upgrade	Water Water	Quality Quality	0.000			28/7/13 28/7/13		Highland Argyll And Bute	0.178 0.165	0.000			0.000 0.000	0.000	0.000 0.000	
30576	Penwhapple New WTW	Water	Base	0.042			25/2/08		South Ayrshire	2.113				1.506	0.000	2.113	
	Penwhapple New WTW - Upgrade	Water	Quality	0.000			23/9/08		South Ayrshire	6.333	0.000			4.527	1.277		
	Penwhirn WTW - Upgrade Perth WTW - Upgrade	Water Water	Quality Quality	0.063			23/9/08 24/12/08		Dumfries And Galloway Perth & Kinross	6.905 3.208	0.001 0.001	0.163 0.110		3.665 1.375	2.253 1.069	3.170 1.501	
	Pettinain STW Upgrade	WasteWater	Quality	0.000		0.000	24/12/08		Scottish Water Wide	1.667	0.000			0.482	1.098	0.000	
	PHILIPSTOUN STW Upgrade	WasteWater	Quality	0.000			11/3/13		West Lothian	0.589	0.000			0.000	0.000	0.000	
	Pithodels Water Pumping Station - Refurbishment	Water Water	Quality Base	0.000			23/9/08 12/5/09		East Renfrewshire Aberdeenshire	5.873 0.812	0.000			4.199 0.093	1.184 0.686	0.000 0.812	
	PITMEDDEN STW Upgrade	WasteWater	Quality	0.000			11/3/13		Aberdeenshire	0.856	0.000			0.000	0.000	0.000	
30585	PLAINS STW Upgrade	WasteWater	Quality	0.000	0.000	2.429	24/12/12		North Lanarkshire	2.429	0.000			0.000	0.000	0.000	0.00%
	PLOCKTON NEW STW Upgrade POLBETH HIGH SCHOOL SPS Refurb	WasteWater WasteWater	Quality Base	0.000 0.005		1.703 0.269	25/12/07 28/7/09		Highland Scottish Water Wide	1.703 0.275	0.000			1.121 0.138	0.000 0.122	0.000 0.275	
	POOLEWE (PHASE 1) ST Upgrade	WasteWater	Quality	0.000	0.000	1.652	24/12/08		Highland	1.652	0.000			0.478	1.087	0.000	
30589	Port Charlotte WTW - Upgrade	Water	Quality	0.013	0.074	4.226	24/12/08	31/3/10	Argyll And Bute	4.312	0.000	0.174	0.741	3.290	0.107	0.634	14.70%
	PRESTON KIRKHOLME SPS Refurb Property - Capital Programme Contigent Liabilities-NE	WasteWater WasteWater	Base Base	0.007	0.000		28/7/09	31/3/10	Scottish Water Wide Scottish Water Wide	0.360 1.296	0.000			0.181 0.324	0.160 0.324		
	Property - Capital Programme Contigent Liabilities-NE	Water	Base	0.000	0.000				Scottish Water Wide	1.462				0.365	0.365		
30593	Property - Capital Programme Contigent Liabilities-NW	WasteWater	Base	0.000	0.000	1.564			Scottish Water Wide	1.564	0.000	0.000	0.000	0.391	0.391	1.564	100.00%
	Property - Capital Programme Contigent Liabilities-NW	Water	Base	0.000					Scottish Water Wide	1.764	0.000			0.441	0.441	1.764	
	Property - Capital Programme Contigent Liabilities-SE Property - Capital Programme Contigent Liabilities-SE	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.670 0.756	0.000			0.168 0.189	0.168 0.189	0.670 0.756	
	Property - Capital Programme Contigent Liabilities-SW	WasteWater	Base	0.000					Scottish Water Wide	0.939	0.000	0.000		0.235	0.235	0.939	
	Property - Capital Programme Contigent Liabilities-SW	Water	Base	0.000					Scottish Water Wide	1.058	0.000			0.265	0.265		
	Property - Capital road schemes for operational sites-NE Property - Capital road schemes for operational sites-NE	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.360 0.406	0.000			0.045 0.051	0.045 0.051	0.360 0.406	
	Property - Capital road schemes for operational sites-NW	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.435	0.000				0.054	0.435	
	Property - Capital road schemes for operational sites-NW	Water	Base	0.000	0.000				Scottish Water Wide	0.490	0.000			0.061	0.061	0.490	
	Property - Capital road schemes for operational sites-SE Property - Capital road schemes for operational sites-SE	WasteWater Water	Base Base	0.000		0.186 0.210			Scottish Water Wide Scottish Water Wide	0.186 0.210	0.000				0.023 0.026	0.186 0.210	
	Property - Capital road schemes for operational sites-SU	WasteWater	Base	0.000					Scottish Water Wide	0.261	0.000			0.033	0.033	0.261	100.00%
	Property - Capital road schemes for operational sites-SW	Water	Base	0.000	0.000				Scottish Water Wide	0.294	0.000			0.037	0.037	0.294	
	Property - Damage below Insured excess-NE Property - Damage below Insured excess-NE	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.206 0.232	0.000			0.026 0.029	0.026 0.029	0.206 0.232	
	Property - Damage below Insured excess-NW	WasteWater	Base	0.000					Scottish Water Wide	0.249	0.000			0.031	0.031	0.249	
	Property - Damage below Insured excess-NW	Water	Base	0.000	0.000	0.280			Scottish Water Wide	0.280	0.000				0.035	0.280	
	Property - Damage below Insured excess-SE Property - Damage below Insured excess-SE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.107 0.120	0.000			0.013 0.015	0.013 0.015		
	Property - Damage below Insured excess-SW	WasteWater	Base	0.000					Scottish Water Wide	0.149				0.019	0.019		
	Property - Damage below Insured excess-SW	Water	Base	0.000					Scottish Water Wide	0.168	0.000				0.021	0.168	
	Property - Fixed wire testing-NE Property - Fixed wire testing-NE	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.400 0.451	0.000			0.100 0.113	0.100 0.113	0.400 0.451	
	Property - Fixed wire testing-NW	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.482	0.000				0.113	0.482	
30618	Property - Fixed wire testing-NW	Water	Base	0.000	0.000	0.544			Scottish Water Wide	0.544	0.000	0.136	0.136	0.136	0.136	0.544	100.00%
	Property - Fixed wire testing-SE Property - Fixed wire testing-SE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.207 0.233					0.052 0.058		
	Property - Fixed wire testing-SW	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.289	0.000			0.038	0.038	0.289	
30622	Property - Fixed wire testing-SW	Water	Base	0.000	0.000	0.326			Scottish Water Wide	0.326	0.000	0.082	0.082	0.082	0.082	0.326	100.00%
	Property - H&S minor works-NE Property - H&S minor works-NE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.512 0.577					0.048 0.055	0.512 0.577	
	Property - H&S minor works-NW	WasteWater	Base	0.000					Scottish Water Wide	0.618	0.000				0.058	0.618	
	Property - H&S minor works-NW	Water	Base	0.000	0.000	0.696			Scottish Water Wide	0.696	0.000	0.150	0.150	0.066	0.066	0.696	100.00%
	Property - H&S minor works-SE Property - H&S minor works-SE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.265 0.298	0.000			0.025 0.028	0.025 0.028	0.265 0.298	
	Property - H&S minor works-SE Property - H&S minor works-SW	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.298	0.000			0.028	0.028	0.298	100.00%
30630	Property - H&S minor works-SW	Water	Base	0.000	0.000	0.418			Scottish Water Wide	0.418	0.000	0.090	0.090	0.040	0.040	0.418	100.00%
	Property - Heating/Ventilation Systems-NE	WasteWater Water	Base	0.000	0.000				Scottish Water Wide	0.301 0.339	0.000			0.038 0.042	0.038 0.042	0.301 0.339	100.00% 100.00%
	Property - Heating/Ventilation Systems-NE Property - Heating/Ventilation Systems-NW	WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.363					0.042		
30634	Property - Heating/√entilation Systems-NW	Water	Base	0.000	0.000	0.409			Scottish Water Wide	0.409	0.000	0.051	0.051	0.051	0.051	0.409	100.00%
	Property - Heating/Ventilation Systems-SE	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.156					0.019		
	Property - Heating/Ventilation Systems-SE Property - Heating/Ventilation Systems-SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.175 0.218	0.000				0.022 0.027		
	Property - Heating/Ventilation Systems-SW	Water	Base	0.000					Scottish Water Wide	0.246				0.031	0.031	0.246	

		Genera	al Project Informat	ion							Fina	ncial Informatio	n of Chosen Sce	nario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
							F										
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project				Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Project - %
	I	I	1-					ı	1								
	Property - Housing Stock-NE Property - Housing Stock-NW	Water Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.051 0.062	0.000 0.000	0.006	0.006 0.008	0.006 0.008	0.006 0.008	0.051 0.062	100.00% 100.00%
30641	Property - Housing Stock-SE	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.026	0.000	0.003	0.003	0.003	0.003	0.026	100.00%
	Property - Housing Stock-SW Property - Intruder & Fire Alarms-NE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.037 0.150	0.000 0.000	0.005 0.019	0.005 0.019	0.005 0.019	0.005 0.019	0.037 0.150	100.00% 100.00%
	Property - Intruder & Fire Alarms-NE	Water	Base	0.000					Scottish Water Wide	0.170	0.000	0.013	0.021	0.013	0.013	0.170	100.00%
	Property - Intruder & Fire Alarms-NW	WasteWater	Base	0.000					Scottish Water Wide	0.182		0.023	0.023	0.023	0.023		100.00%
	Property - Intruder & Fire Alarms-NW Property - Intruder & Fire Alarms-SE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.205 0.078	0.000 0.000	0.026 0.010	0.026 0.010	0.026 0.010	0.026 0.010	0.205 0.078	100.00% 100.00%
30648	Property - Intruder & Fire Alarms-SE	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.088	0.000	0.011	0.011	0.011	0.011	0.088	100.00%
	Property - Intruder & Fire Alarms-SW Property - Intruder & Fire Alarms-SW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.109 0.123	0.000 0.000	0.014 0.015	0.014 0.015	0.014 0.015	0.014 0.015		100.00% 100.00%
00000	Property - Land Reform (Scotland) Act 2003 Outdoor Access Code		Buse						Occition veater veide		0.000	0.010	0.010	0.010			
30651	NE Property - Land Reform (Scotland) Act 2003 Outdoor Access Code	Water	Base	0.000	0.000	0.256			Scottish Water Wide	0.256	0.000	0.048	0.048	0.048	0.048	0.256	100.00%
30652		Water	Base	0.000	0.000	0.309			Scottish Water Wide	0.309	0.000	0.058	0.058	0.058	0.058	0.309	100.00%
20052	Property - Land Reform (Scotland) Act 2003 Outdoor Access Code		Page	0.000					Scottish Mater Mide	0.430	0.000	0.005	0.005	0.005	0.005	0.420	
30653	Property - Land Reform (Scotland) Act 2003 Outdoor Access Code	Water	Base	0.000	0.000	0.132			Scottish Water Wide	0.132	0.000	0.025	0.025	0.025	0.025	0.132	100.00%
30654		Water	Base	0.000					Scottish Water Wide	0.185	0.000	0.035	0.035	0.035	0.035	0.185	100.00%
	Property - Landlord liabilities for Rural estate-NE Property - Landlord liabilities for Rural estate-NW	Water Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.256 0.309	0.000 0.000	0.032 0.039	0.032 0.039	0.032 0.039	0.032 0.039	0.256 0.309	100.00% 100.00%
	Property - Landlord liabilities for Rural estate-SE	Water	Base	0.000	0.000	0.132			Scottish Water Wide	0.132	0.000	0.017	0.017	0.017	0.017	0.132	100.00%
	Property - Landlord liabilities for Rural estate-SW	Water WasteWater	Base	0.000					Scottish Water Wide Scottish Water Wide	0.185 0.037	0.000 0.000	0.023 0.005	0.023 0.005	0.023 0.005	0.023 0.005	0.185 0.037	100.00% 100.00%
	Property - Office Security Access System-NE Property - Office Security Access System-NE	Water	Base Base	0.000					Scottish Water Wide	0.037	0.000	0.005	0.005	0.005	0.005	0.037	100.00%
	Property - Office Security Access System-NW	WasteWater	Base	0.000					Scottish Water Wide	0.044	0.000	0.006	0.006	0.006	0.006	0.044	100.00%
	Property - Office Security Access System-NW Property - Office Security Access System-SE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.050 0.019	0.000 0.000	0.006 0.002	0.006 0.002	0.006 0.002	0.006 0.002	0.050 0.019	100.00% 100.00%
	Property - Office Security Access System-SE	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.021	0.000	0.003	0.003	0.003	0.003	0.021	100.00%
	Property - Office Security Access System-SW Property - Office Security Access System-SW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.027 0.030	0.000 0.000	0.003 0.004	0.003 0.004	0.003 0.004	0.003 0.004	0.027 0.030	100.00% 100.00%
	Property - Other external Building Fabric-NE	WasteWater	Base	0.000					Scottish Water Wide	0.275	0.000	0.034	0.034	0.034	0.034	0.275	100.00%
	Property - Other external Building Fabric-NE	Water	Base	0.000					Scottish Water Wide	0.310	0.000	0.039	0.039	0.039	0.039	0.310	100.00%
	Property - Other external Building Fabric-NW Property - Other external Building Fabric-NW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.331 0.374	0.000 0.000	0.041 0.047	0.041 0.047	0.041 0.047	0.041 0.047	0.331 0.374	100.00% 100.00%
30671	Property - Other external Building Fabric-SE	WasteWater	Base	0.000	0.000	0.142			Scottish Water Wide	0.142	0.000	0.018	0.018	0.018	0.018	0.142	100.00%
	Property - Other external Building Fabric-SE Property - Other external Building Fabric-SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.160 0.199	0.000 0.000	0.020 0.025	0.020 0.025	0.020 0.025	0.020 0.025	0.160 0.199	100.00% 100.00%
	Property - Other external Building Fabric-SW	Water	Base	0.000					Scottish Water Wide	0.224	0.000	0.028	0.028	0.028	0.028	0.224	100.00%
	Property - Redundant Assets-NE Property - Redundant Assets-NE	WasteWater	Base	0.000					Scottish Water Wide	0.970 1.094	0.000 0.000	0.243 0.274	0.243 0.274	0.243 0.274	0.243 0.274	0.970	100.00%
	Property - Redundant Assets-NE Property - Redundant Assets-NW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	1.094	0.000	0.274	0.274	0.274	0.274	1.094 1.171	100.00% 100.00%
	Property - Redundant Assets-NW	Water	Base	0.000	0.000	1.320			Scottish Water Wide	1.320	0.000	0.330	0.330	0.330	0.330	1.320	100.00%
	Property - Redundant Assets-SE Property - Redundant Assets-SE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.502 0.566	0.000 0.000	0.125 0.141		0.125 0.141	0.125 0.141	0.502 0.566	100.00% 100.00%
30681	Property - Redundant Assets-SW	WasteWater	Base	0.000	0.000	0.703			Scottish Water Wide	0.703	0.000	0.176	0.176	0.176	0.176	0.703	100.00%
	Property - Redundant Assets-SW Property - Refurbish Offices-NE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.792 0.516	0.000 0.000	0.198 0.065	0.198 0.065	0.198 0.065	0.198 0.065	0.792 0.516	100.00% 100.00%
30684	Property - Refurbish Offices-NE	Water	Base	0.000	0.000	0.582			Scottish Water Wide	0.582	0.000	0.073	0.073	0.073	0.073	0.582	100.00%
	Property - Refurbish Offices-NW	WasteWater	Base	0.000					Scottish Water Wide	0.623		0.078	0.078	0.078	0.078	0.623	100.00%
	Property - Refurbish Offices-NW Property - Refurbish Offices-SE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.703 0.267	0.000 0.000	0.088 0.033	0.088 0.033	0.088 0.033	0.088 0.033	0.703 0.267	100.00% 100.00%
30688	Property - Refurbish Offices-SE	Water	Base	0.000	0.000	0.301			Scottish Water Wide	0.301	0.000	0.038	0.038	0.038	0.038	0.301	100.00%
	Property - Refurbish Offices-SW Property - Refurbish Offices-SW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.374 0.422	0.000 0.000	0.047 0.053	0.047 0.053	0.047 0.053	0.047 0.053	0.374 0.422	100.00% 100.00%
30691	Property - Renew Fencing to operational sites-NE	WasteWater	Base	0.000	0.000	0.578			Scottish Water Wide	0.578	0.000	0.072	0.072	0.072	0.072	0.578	100.00%
	Property - Renew Fencing to operational sites-NE Property - Renew Fencing to operational sites-NW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.651 0.697	0.000 0.000	0.081 0.087	0.081 0.087	0.081 0.087	0.081 0.087	0.651 0.697	100.00% 100.00%
	Property - Renew Fencing to operational sites-NW Property - Renew Fencing to operational sites-NW	Water	Base	0.000					Scottish Water Wide	0.786	0.000	0.007	0.087	0.098	0.087	0.786	100.00%
30695	Property - Renew Fencing to operational sites-SE	WasteWater	Base	0.000	0.000	0.299			Scottish Water Wide	0.299	0.000	0.037	0.037	0.037	0.037	0.299	100.00%
	Property - Renew Fencing to operational sites-SE Property - Renew Fencing to operational sites-SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.337 0.418	0.000 0.000	0.042 0.052	0.042 0.052	0.042 0.052	0.042 0.052	0.337 0.418	100.00% 100.00%
30698	Property - Renew Fencing to operational sites-SW	Water	Base	0.000	0.000	0.472			Scottish Water Wide	0.472	0.000	0.059	0.059	0.059	0.059	0.472	100.00%
	Property - Replacement/ New Furniture-NE Property - Replacement/ New Furniture-NE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.144 0.163		0.018 0.020	0.018 0.020	0.018 0.020	0.018 0.020	0.144 0.163	100.00% 100.00%
	Property - Replacement/ New Furniture-NW	WasteWater	Base	0.000	0.000	0.174			Scottish Water Wide	0.174	0.000	0.020	0.020	0.020	0.020		
	Property - Replacement/ New Furniture-NW	Water	Base	0.000	0.000				Scottish Water Wide	0.197		0.025	0.025	0.025	0.025		100.00%
30703	Property - Replacement/ New Furniture-SE	WasteWater	Base	0.000	0.000	0.000			Scottish Water Wide	0.075	0.000	0.009	0.009	0.009	0.009	0.075	100.00%

		Genera	I Project Informat	tion							Fina	ncial Informatio	n of Chosen Sce	mario		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Whiter or					Engaged /									Deposition of	Deposition of
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	Property - Replacement/ New Furniture-SE	Water	Base	0.000					Scottish Water Wide	0.084	0.000		0.011		0.011		
	Property - Replacement/ New Furniture-SW Property - Replacement/ New Furniture-SW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.105 0.118	0.000		0.013 0.015	0.013 0.015	0.013 0.015		
	Property - Roof Renewals due to backlog of R&M-NE	WasteWater	Base	0.000		0.549			Scottish Water Wide	0.549	0.000		0.069		0.069		
	Property - Roof Renewals due to backlog of R&M-NE	Water	Base	0.000	0.000				Scottish Water Wide	0.619	0.000		0.077	0.077	0.077		
	Property - Roof Renewals due to backlog of R&M-NW Property - Roof Renewals due to backlog of R&M-NW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.663 0.748	0.000		0.083 0.093	0.083 0.093	0.083 0.093		
	Property - Roof Renewals due to backlog of R&M-SE	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.284	0.000		0.036	0.036	0.036		
	Property - Roof Renewals due to backlog of R&M-SE	Water	Base	0.000	0.000				Scottish Water Wide	0.320	0.000		0.040	0.040	0.040		
	Property - Roof Renewals due to backlog of R&M-SW Property - Roof Renewals due to backlog of R&M-SW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.398 0.449	0.000		0.050 0.056	0.050 0.056	0.050 0.056		
	Q&SIIIB Further Devt Costs	WasteWater	Base	0.504					Scottish Water Wide	1.008	0.000		0.211	0.406	0.391	1.008	
30716	Q&SIIIB Further Devt Costs	Water	Base	0.504	0.000	0.504			Scottish Water Wide	1.008	0.000		0.211		0.391	1.008	100.00%
	Q&SIV Devt Costs Q&SIV Devt Costs	WasteWater Water	Base Base	1.294 1.294					Scottish Water Wide Scottish Water Wide	2.587 2.587	0.000		0.000 0.000	0.000	0.000		
	RAASAY WTW - Completion	Water	Quality	0.000	0.006				Scottish Water Wide	0.318	0.000		0.000	0.000	0.000		
30720	RAASAY WTW - Upgrade	Water	Quality	0.000	0.007	0.346	28/7/08	31/3/09	Scottish Water Wide	0.353	0.000	0.018	0.051	0.284	0.000	0.000	0.00%
	Raw Water Supplies - Compliant Water at Point of Use Rawburn WTW - Upgrade	Water Water	Quality	0.000	0.940 0.106		23/9/08	21/2/10	Scottish Water Wide	0.940 5.652	0.000		0.000 0.361	0.000 4.089	0.000 1.065		
	Reduction for overlap removal	Water	Quality Quality	0.007			23/3/00	31/3/10	Scottish Borders Scottish Water Wide	-51.753	-0.230		-11.294	-32.388	-5.376		
	Removal/Backfilling of cross connections between water mains &																
	sewers Reston STW Upgrade	Water WasteWater	Quality Quality	0.000	26.911		26/6/13	24/2/44	Scottish Water Wide	26.911 0.433	0.000		3.364 0.000	3.364 0.000	3.364 0.000		
	Rheniqadale WTW - Upgrade	Water	Quality	0.000	0.000 0.011		10/4/08		Borders, The Western Isles	0.565	0.000		0.189	0.343	0.000		
	Ringford Borehole WTW - Refurbishment	Water	Base	0.011	0.000	0.518	12/5/09		Dumfries And Galloway	0.528	0.000	0.011	0.071	0.445	0.001	0.528	100.00%
	Roberton WTW - Upgrade	Water	Quality	0.015			24/12/08		Scottish Borders	4.070	0.000		0.690	3.120	0.097		
	Rochomie WTW - Upgrade Rosebery WTW - Upgrade	Water Water	Quality Quality	0.000 0.074	0.042 0.299		24/1/08 10/7/08	31/3/09 31/3/10	Midlothian	2.091 18.530	0.000 0.131		0.704 5.364		0.000 3.039		
	Rosemarkie WTW - Upgrade	Water	Quality	0.000			28/7/13		Highland	0.164	0.000		0.000	0.000	0.000		
	ROSEWELL STW - Completion	WasteWater	Quality	0.000	0.000		44 12 44 2	24/2/44	Scottish Water Wide	0.496	0.000		0.000	0.000	0.000		
	ROSLIN STW Upgrade Saddell WTW - Upgrade	WasteWater Water	Quality Quality	0.000			11/3/13 10/4/08		Midlothian Argyll And Bute	0.672 0.865	0.000		0.000 0.290	0.000 0.524	0.000		
	Salen WTW - Upgrade	Water	Quality	0.000	0.037		24/1/08		Highland	1.865	0.000		0.628	1.117	0.000		
	SALINE STW Upgrade	WasteWater	Quality	0.000			11/3/13	31/3/14		0.704	0.000		0.000	0.000	0.000		
	SALSBURGH STW Upgrade Sanday WTW - Upgrade	WasteWater Water	Quality Quality	0.000 0.021	0.000 0.077		25/12/11 24/12/08		North Lanarkshire Orkney Islands	1.030 4.910	0.000		0.000 0.822	0.000 3.778	0.000 0.112		
	Sandy Loch Lerwick WTW - Upgrade	Water	Quality	0.015			24/12/08		Shetland Islands	3.377	0.000		0.231		1.251	0.740	
	Sanna WTW - Upgrade	Water	Quality	0.000	0.013		10/4/08		Highland	0.645	0.000		0.216		0.000		
	SAVALBEG (LAIRG) WTW - Upgrade. SAVALBEG (LAIRG) WTW Completion	Water Water	Quality Quality	0.000	0.011 0.013		10/4/08	31/3/09	Scottish Water Wide Scottish Water Wide	0.546 0.638	0.000		0.183 0.000	0.331 0.000	0.000		
	Scientific - NE	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.620	0.000		0.046		0.033		
30744	Scientific - NE	Water	Base	0.000	0.000	1.448			Scottish Water Wide	1.448	0.000	0.432	0.106	0.119	0.078	1.448	100.00%
	Scientific - NW Scientific - NW	WasteWater Water	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.863 2.014	0.000		0.063 0.148	0.071 0.165	0.046 0.108	0.863 2.014	
	Scientific - SE	WasteWater	Base	0.000	0.000	0.486			Scottish Water Wide	0.486	0.000	0.145	0.036	0.040		0.486	100.00%
	Scientific - SE	Water	Base	0.000					Scottish Water Wide	1.133	0.000		0.083		0.061	1.133	
	Scientific - SW Scientific - SW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.728 1.700	0.000		0.053 0.125		0.039 0.091	0.728 1.700	
	SCONSER WTW - Completion	Water	Quality	0.000					Scottish Water Wide	0.254	0.000		0.000	0.000	0.000		
	SCONSER WTW - Upgrade	Water	Quality	0.000	0.006	0.284	28/7/13	31/3/14	Scottish Water Wide	0.289	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Scottish Water Bylaws Scourie WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/07	31/2/00	Scottish Water Wide Highland	8.256 1.417	0.000 0.098		1.032 0.907	1.032 0.000	1.032 0.000		
	Septic Tanks Capital Maintenance - SWW	WasteWater	Base	0.000			24/1/0/	3 1/3/00	Scottish Water Wide	10.675	0.005		1.335		1.335		
30756	Service Relocation - Sewers SE	WasteWater	Base	4.216	0.000	0.000			N/A	4.216	0.000	0.000	0.000	2.779	0.000	4.216	100.00%
	Service Relocation - Sewers SWW Service Relocation - Water Mains NE	WasteWater Water	Base Base	0.169 0.000					Scottish Water Wide Fife	0.169 0.048	0.000		0.021 0.000	0.021 0.000	0.021 0.000	0.169 0.048	
	Service Relocation - Water Mains NE Service Relocation - Water Mains SE	Water	Base	2.694					N/A	2.694	0.000		0.000	1.733	0.048		
30760	Service Relocation - Water Mains SW	Water	Base	0.143	0.000	0.000			N/A	0.143	0.000	0.048	0.095	0.000	0.000	0.143	100.00%
	Service Relocation - Water Mains SWW	Water	Base	3.559					Scottish Water Wide	3.559	0.000		0.445		0.445		
	Sewer Cleaning - Opex Sewer Rehab - ALLERS DOA	WasteWater WasteWater	Base Base	0.000 0.779					Scottish Water Wide Scottish Water Wide	0.000 0.777	0.000 0.002		0.000 0.194		0.000 0.194		
30764	Sewer Rehab - ALLOA DOA	WasteWater	Base	0.681	0.000	0.000			Scottish Water Wide	0.680	0.002	0.170	0.170	0.170	0.170	0.681	100.00%
	Sewer Rehab - ARMADALE DOA	WasteWater	Base	0.702					Scottish Water Wide	0.700	0.002		0.175		0.175		
	Sewer Rehab - AUCHENGEICH DOA Sewer Rehab - AYR DOA	WasteWater WasteWater	Base Base	0.481 2.819					Scottish Water Wide Scottish Water Wide	0.480 2.812	0.001 0.006		0.120 0.703	0.120 0.703	0.120 0.703		
50707	Sewer Rehab - BANFF DOA	WasteWater	Base	0.267					Scottish Water Wide	0.267	0.001		0.763				

		Genera	I Project Informa	tion							Fina	ncial Informatio	n of Chosen Sce	nario		Canital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	Sewer Rehab - BATHGATE DOA Sewer Rehab - BLACKBURN LOTHIAN DOA	WasteWater	Base	0.738 0.409					Scottish Water Wide	0.736 0.408	0.002 0.001		0.184		0.184	0.738 0.409	
	Sewer Rehab - BO'NESS DOA	WasteWater WasteWater	Base Base	0.409	0.000				Scottish Water Wide Scottish Water Wide	0.408	0.001		0.102 0.077		0.102 0.077	0.308	100.00% 100.00%
	Sewer Rehab - BONNYBRIDGE DOA	WasteWater	Base	0.265					Scottish Water Wide	0.264	0.001		0.066	0.066	0.066	0.265	100.00%
	Sewer Rehab - BOTHWELLBANK DOA Sewer Rehab - BROXBURN DOA	WasteWater WasteWater	Base Base	0.526 0.395					Scottish Water Wide Scottish Water Wide	0.524 0.395	0.001 0.001	0.131 0.099	0.131 0.099		0.131 0.099	0.526 0.395	100.00% 100.00%
	Sewer Rehab - BUCKIE MORAY EAST DOA	WasteWater	Base	0.438					Scottish Water Wide	0.437	0.001		0.109		0.109	0.438	100.00%
	Sewer Rehab - CARBARNS DOA	WasteWater	Base	0.709	0.000	0.000			Scottish Water Wide	0.707	0.002		0.177		0.177	0.709	100.00%
	Sewer Rehab - CARNOUSTIE DOA Sewer Rehab - COURSINGTON MOTHERWELL DOA	WasteWater	Base	0.427					Scottish Water Wide	0.426 2.496	0.001 0.006	0.106 0.624	0.106 0.624		0.106 0.624	0.427	100.00%
	Sewer Rehab - COUNTINGTON MOTHERWELL DOA Sewer Rehab - COWDENBEATH DOA	WasteWater WasteWater	Base Base	2.502 0.304					Scottish Water Wide Scottish Water Wide	0.303	0.006		0.624		0.624		100.00% 100.00%
30780	Sewer Rehab - COWIE GRAMPIAN DOA	WasteWater	Base	0.461	0.000	0.000			Scottish Water Wide	0.460	0.001	0.115	0.115	0.115	0.115	0.461	100.00%
	Sewer Rehab - CRUDEN BAY DOA Sewer Rehab - DALDOWIE DOA	WasteWater WasteWater	Base Base	0.296 2.177					Scottish Water Wide Scottish Water Wide	0.295 2.172	0.001 0.005		0.074 0.543		0.074 0.543	0.296 2.177	100.00% 100.00%
	Sewer Rehab - DALMARNOCK DOA	WasteWater	Base	1.201	0.000				Scottish Water Wide	1.198	0.003		0.300	0.300	0.300	1.201	100.00%
30784	Sewer Rehab - DALMELLINGTON DOA	WasteWater	Base	0.349	0.000	0.000			Scottish Water Wide	0.349	0.001	0.087	0.087	0.087	0.087	0.349	100.00%
	Sewer Rehab - DALMUIR DOA Sewer Rehab - DALRY DOA	WasteWater WasteWater	Base Base	3.040 0.290					Scottish Water Wide Scottish Water Wide	3.033 0.289	0.007 0.001		0.758 0.072	0.758 0.072	0.758 0.072	3.040 0.290	100.00% 100.00%
	Sewer Rehab - DEERDYKES DOA	WasteWater	Base	0.337	0.000				Scottish Water Wide	0.336	0.001	0.072	0.072		0.072	0.337	100.00%
	Sewer Rehab - DINGWALL DOA	WasteWater	Base	0.429					Scottish Water Wide	0.428	0.001		0.107	0.107	0.107	0.429	100.00%
	Sewer Rehab - DUMBARTON DOA Sewer Rehab - DUNDEE CENTRAL DOA	WasteWater WasteWater	Base Base	0.395 0.450					Scottish Water Wide Scottish Water Wide	0.394 0.449	0.001 0.001	0.099 0.112	0.099 0.112		0.099 0.112	0.395 0.450	100.00% 100.00%
	Sewer Rehab - DUNDEE IRDS DOA	WasteWater	Base	0.325					Scottish Water Wide	0.324	0.001		0.081	0.081	0.081	0.325	100.00%
30792	Sewer Rehab - DUNDEE STANNERGATE DOA	WasteWater	Base	0.322	0.000	0.000			Scottish Water Wide	0.321	0.001	0.080	0.080	0.080	0.080	0.322	100.00%
	Sewer Rehab - DUNFERMLINE DOA Sewer Rehab - DUNNSWOOD DOA	WasteWater WasteWater	Base Base	0.561 0.407					Scottish Water Wide Scottish Water Wide	0.560 0.406	0.001 0.001		0.140 0.101	0.140 0.101	0.140 0.101	0.561 0.407	100.00% 100.00%
	Sewer Rehab - EAST CALDER DOA	WasteWater	Base	1.273					Scottish Water Wide	1.270	0.001		0.101		0.101	1.273	100.00%
	Sewer Rehab - ERSKINE DOA	WasteWater	Base	0.359					Scottish Water Wide	0.358	0.001		0.089	0.089	0.089	0.359	
	Sewer Rehab - FAIRLIE DOA Sewer Rehab - FALKIRK DOA	WasteWater WasteWater	Base Base	0.299 1.337	0.000				Scottish Water Wide Scottish Water Wide	0.298 1.335	0.001 0.003		0.075 0.334	0.075 0.334	0.075 0.334	0.299 1.337	100.00% 100.00%
	Sewer Rehab - FRASERBURGH PHINGASK DOA	WasteWater	Base	0.740					Scottish Water Wide	0.738	0.003		0.185		0.185	0.740	100.00%
	Sewer Rehab - GARTOCHARN DOA	WasteWater	Base	0.678					Scottish Water Wide	0.676	0.002		0.169	0.169	0.169	0.678	100.00%
	Sewer Rehab - GIRVAN SCREEN & DISINTEG DOA Sewer Rehab - GLENROTHES NORTH DOA	WasteWater WasteWater	Base Base	0.386 0.291	0.000				Scottish Water Wide Scottish Water Wide	0.385 0.291	0.001 0.001	0.096 0.073	0.096 0.073	0.096 0.073	0.096 0.073	0.386 0.291	100.00% 100.00%
	Sewer Rehab - HAMILTON DOA	WasteWater	Base	1.686					Scottish Water Wide	1.682			0.421		0.421	1.686	100.00%
	Sewer Rehab - HELENSBURGH DOA	WasteWater	Base	0.538	0.000				Scottish Water Wide	0.537	0.001		0.134		0.134	0.538	100.00%
	Sewer Rehab - INVERCLYDE DOA Sewer Rehab - INVERNESS EAST DOA	WasteWater WasteWater	Base Base	4.685 0.824					Scottish Water Wide Scottish Water Wide	4.675 0.823	0.010 0.002		1.169 0.206		1.169 0.206	4.685 0.824	100.00% 100.00%
	Sewer Rehab - INVERNESS WEST DOA	WasteWater	Base	0.856					Scottish Water Wide	0.854	0.002		0.213	0.213	0.213	0.856	100.00%
	Sewer Rehab - INVERURIE NEW DOA	WasteWater	Base	0.541					Scottish Water Wide	0.539	0.001		0.135		0.135		100.00%
	Sewer Rehab - IRON MILL BAY DOA Sewer Rehab - JOHNSTONE DOA	WasteWater WasteWater	Base Base	0.351 1.241	0.000				Scottish Water Wide Scottish Water Wide	0.350 1.239	0.001 0.003		0.088 0.310	0.088 0.310	0.088 0.310	0.351 1.241	100.00% 100.00%
30811	Sewer Rehab - KEITH DOA	WasteWater	Base	0.432	0.000	0.000			Scottish Water Wide	0.431	0.001	0.108	0.108	0.108	0.108	0.432	100.00%
	Sewer Rehab - KILBIRNIE DOA	WasteWater	Base	0.805					Scottish Water Wide	0.803	0.002		0.201		0.201	0.805	100.00%
	Sewer Rehab - KILMARNOCK DOA Sewer Rehab - KILSYTH DOA	WasteWater WasteWater	Base Base	2.138 0.335					Scottish Water Wide Scottish Water Wide	2.133 0.334					0.533 0.084		
30815	Sewer Rehab - KILWINNING DOA	WasteWater	Base	0.998	0.000	0.000			Scottish Water Wide	0.996	0.002	0.249	0.249	0.249	0.249	0.998	100.00%
	Sewer Rehab - KINNEIL KERSE DOA	WasteWater WasteWater	Base	0.286	0.000				Scottish Water Wide	0.286	0.001		0.071		0.071	0.286	100.00%
	Sewer Rehab - KIRKCALDY DOA Sewer Rehab - KIRKINTILLOCH DOA	WasteWater WasteWater	Base Base	0.547 0.467	0.000				Scottish Water Wide Scottish Water Wide	0.545 0.466	0.001 0.001		0.136 0.117		0.136 0.117	0.547 0.467	100.00% 100.00%
30819	Sewer Rehab - LAIGHPARK PAISLEY DOA	WasteWater	Base	4.074	0.000	0.000			Scottish Water Wide	4.065	0.009	1.016	1.016	1.016	1.016	4.074	100.00%
	Sewer Rehab - LANARK DOA	WasteWater WasteWater	Base	0.323					Scottish Water Wide	0.322			0.081	0.081	0.081	0.323	100.00%
	Sewer Rehab - LAURIESTON DOA Sewer Rehab - LINLITHGOW DOA	WasteWater WasteWater	Base Base	0.282 0.380					Scottish Water Wide Scottish Water Wide	0.282 0.379	0.001 0.001		0.070 0.095	0.070 0.095	0.070 0.095	0.282 0.380	100.00% 100.00%
30823	Sewer Rehab - LINWOOD DOA	WasteWater	Base	0.818	0.000	0.000			Scottish Water Wide	0.817	0.002	0.204	0.204	0.204	0.204	0.818	100.00%
	Sewer Rehab - MAYBOLE DOA Sewer Rehab - MEADOWHEAD DOA	WasteWater	Base	0.267	0.000				Scottish Water Wide	0.266 1.624	0.001 0.004		0.067 0.406	0.067 0.406	0.067 0.406	0.267	100.00% 100.00%
	Sewer Renab - MEADOWHEAD DOA Sewer Rehab - MUSSELBURGH DOA	WasteWater WasteWater	Base Base	1.628 1.360					Scottish Water Wide Scottish Water Wide	1.624	0.004		0.406	0.406	0.406	1.628 1.360	100.00%
30827	Sewer Rehab - NEW CUMNOCK DOA	WasteWater	Base	0.331	0.000	0.000			Scottish Water Wide	0.330	0.001	0.083	0.083	0.083	0.083	0.331	100.00%
	Sewer Rehab - NEWMORE DOA	WasteWater WasteWater	Base	0.273					Scottish Water Wide	0.272			0.068	0.068	0.068	0.273	100.00%
	Sewer Rehab - NIGG HEADWORKS DOA Sewer Rehab - NORTH BERWICK DOA	WasteWater WasteWater	Base Base	4.108 0.327	0.000				Scottish Water Wide Scottish Water Wide	4.099 0.326	0.009 0.001		1.025 0.081	1.025 0.081	1.025 0.081	4.108 0.327	100.00% 100.00%
30831	Sewer Rehab - OLDMELDRUM DOA	WasteWater	Base	0.267	0.000	0.000			Scottish Water Wide	0.267	0.001	0.067	0.067	0.067	0.067	0.267	100.00%
	Sewer Rehab - PENICUIK DOA	WasteWater	Base	0.449					Scottish Water Wide	0.448	0.001		0.112		0.112	0.449	100.00%
30833	Sewer Rehab - PERSLEY DOA	WasteWater	Base	0.586	0.000	0.000		L	Scottish Water Wide	0.585	0.001	0.146	0.146	0.146	0.146	0.586	100.00%

		Genera	I Project Informa	tion							Fina	ncial Informatio	n of Chosen Sce	mario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
							F									December of	
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	Sewer Rehab - PERTH DOA	WasteWater	Base	0.376					Scottish Water Wide	0.375		0.094			0.094	0.376	
	Sewer Rehab - PETERHEAD - BURNHAVEN DOA Sewer Rehab - PHILIPSHILL DOA	WasteWater WasteWater	Base Base	1.081 0.970	0.000				Scottish Water Wide Scottish Water Wide	1.079 0.967	0.002 0.002			0.270 0.242	0.270 0.242	1.081 0.970	100.00% 100.00%
30837	Sewer Rehab - POLMONTHILL DOA	WasteWater	Base	0.496	0.000	0.000			Scottish Water Wide	0.495	0.001	0.124	0.124	0.124	0.124	0.496	100.00%
	Sewer Rehab - PORTLETHEN DOA	WasteWater	Base	0.279	0.000				Scottish Water Wide	0.278	0.001			0.070	0.070	0.279	100.00%
	Sewer Rehab - ROSEHEARTY DOA Sewer Rehab - ROTHESAY DOA	WasteWater WasteWater	Base Base	0.279 0.437	0.000				Scottish Water Wide Scottish Water Wide	0.278 0.436	0.001 0.001			0.070 0.109	0.070 0.109	0.279 0.437	100.00% 100.00%
	Sewer Rehab - SHIELDHALL DOA	WasteWater	Base	3.936	0.000	0.000			Scottish Water Wide	3.927	0.009	0.982	0.982	0.982	0.982	3.936	100.00%
	Sewer Rehab - SKELLYTON DOA	WasteWater	Base	0.504					Scottish Water Wide	0.503	0.001	0.126		0.126	0.126	0.504	100.00%
	Sewer Rehab - STEVENSTON DOA Sewer Rehab - STEWARTON (AYRSHIRE) DOA	WasteWater WasteWater	Base Base	1.108 0.497	0.000				Scottish Water Wide Scottish Water Wide	1.106 0.495	0.002 0.001				0.276 0.124	1.108 0.497	100.00% 100.00%
30845	Sewer Rehab - STIRLING DOA	WasteWater	Base	0.816	0.000	0.000			Scottish Water Wide	0.814	0.002	0.203	0.203	0.203	0.203	0.816	100.00%
	Sewer Rehab - STRATHAVEN DOA	WasteWater	Base	0.376	0.000				Scottish Water Wide	0.375	0.001			0.094	0.094	0.376	100.00%
	Sewer Rehab - SWINSTIE CLELAND DOA Sewer Rehab - THRUMSTER DOA	WasteWater WasteWater	Base Base	0.335 0.458	0.000				Scottish Water Wide Scottish Water Wide	0.334 0.457	0.001 0.001	0.084 0.114		0.084 0.114	0.084 0.114	0.335 0.458	100.00% 100.00%
30849	Sewer Rehab - THURSO DOA	WasteWater	Base	0.609	0.000	0.000			Scottish Water Wide	0.607	0.001	0.152	0.152	0.152	0.152	0.609	100.00%
	Sewer Rehab - TROON DOA	WasteWater	Base	0.855					Scottish Water Wide	0.853	0.002				0.213		100.00%
	Sewer Rehab - UNDERWOOD (CUMNOCK) DOA Sewer Rehab - UPPER IRVINE VALLEY DOA	WasteWater WasteWater	Base Base	1.844 0.818	0.000				Scottish Water Wide Scottish Water Wide	1.840 0.817	0.004 0.002			0.460 0.204	0.460 0.204	1.844 0.818	100.00% 100.00%
	Sewer Rehab - WALLYFORD DOA	WasteWater	Base	2.064					Scottish Water Wide	2.059	0.005				0.515		100.00%
	Sewer Rehab - WEST KILBRIDE DOA	WasteWater	Base	0.294	0.000				Scottish Water Wide	0.294	0.001	0.073		0.073	0.073	0.294	100.00%
	Sewer Rehab - WHITBURN DOA Sewer Rehab < £250k - NE	WasteWater WasteWater	Base Base	0.491 7.445					Scottish Water Wide Scottish Water Wide	0.490 7.428	0.001 0.017				0.122 1.857	0.491 7.445	100.00% 100.00%
	Sewer Rehab < £250k - NW	WasteWater	Base	5.125					Scottish Water Wide	5.113	0.017			1.278	1.278	5.125	100.00%
	Sewer Rehab < £250k - SE	WasteWater	Base	3.706					Scottish Water Wide	3.698	0.008				0.925	3.706	100.00%
	Sewer Rehab < £250k - SW Sewer Rehab 3B - Ayrshire and Inverciyde	WasteWater WasteWater	Base Base	8.447 2.726	0.000				Scottish Water Wide Scottish Water Wide	8.429 2.720	0.019 0.006			2.107 0.000	2.107 0.000	8.447 2.726	100.00% 100.00%
	Sewer Rehab 3B - Borders Dumfries & Galloway	WasteWater	Base	2.900	0.000				Scottish Water Wide	2.893	0.006			0.000	0.000	2.900	100.00%
	Sewer Rehab 3B - DFL	WasteWater	Base	16.869	0.000				Scottish Water Wide	16.832	0.037			0.000	0.000	16.869	100.00%
	Sewer Rehab 3B - Edinburgh Sewer Rehab 3B - Fife	WasteWater WasteWater	Base Base	2.613 7.025	0.000				Scottish Water Wide Scottish Water Wide	2.607 7.009	0.006 0.016			0.000	0.000	2.613 7.025	100.00% 100.00%
	Sewer Rehab 3B - Glasgow	WasteWater	Base	5.629					Scottish Water Wide	5.616	0.012			0.000	0.000	5.629	100.00%
	Sewer Rehab 3B - Grampian	WasteWater	Base	5.875	0.000	0.000			Scottish Water Wide	5.862	0.013			0.000	0.000	5.875	100.00%
	Sewer Rehab 3B - Lothian Sewer Rehab 3B - NW	WasteWater WasteWater	Base Base	4.466 43.226	0.000				Scottish Water Wide Scottish Water Wide	4.456 43.130	0.010 0.096			0.000	0.000	4.466 43.226	100.00% 100.00%
	Sewer Rehab 3B - Tayside	WasteWater	Base	12.061	0.000				Scottish Water Wide	12.034	0.027			0.000	0.000	12.061	100.00%
	Sewer Structures Capital Maintenance - NE	WasteWater	Base	4.048	0.000				Scottish Water Wide	4.039	0.009				0.482	4.048	100.00%
	Sewer Structures Capital Maintenance - NW Sewer Structures Capital Maintenance - SE	WasteWater WasteWater	Base Base	1.065 5.190	0.000				Scottish Water Wide Scottish Water Wide	1.063 5.179	0.002 0.012			0.127 0.618	0.127 0.618	1.065 5.190	100.00% 100.00%
	Sewer Structures Capital Maintenance - SW	WasteWater	Base	4.867	0.000				Scottish Water Wide	4.856	0.012	0.579		0.579	0.579	4.867	100.00%
	SHAPINSAY WTW - Completion	Water	Quality	0.000	0.000				Scottish Water Wide	0.098	0.000			0.000	0.000	0.000	0.00%
	SHAPINSAY WTW - Upgrade SHIELDAIG WTW - Completion	Water Water	Quality Quality	0.000	0.004 0.012		28/7/13	31/3/14	Scottish Water Wide Scottish Water Wide	0.188 0.600	0.000			0.000	0.000	0.000	0.00% 0.00%
	SHIELDAIG WTW - Completion SHIELDAIG WTW - Upgrade	Water	Quality	0.000	0.012		28/7/13	31/3/14	Scottish Water Wide	0.194	0.000			0.000	0.000	0.000	0.00%
30878	SHIELDHALL STW Upgrade	WasteWater	Quality	0.000	0.000	26.030	10/6/12	31/3/14	Glasgow, City of	26.030	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	SHOTTS STW - SCC SHOTTS STW Upgrade	WasteWater WasteWater	Quality Quality	0.000			11/3/12 23/9/12		North Lanarkshire North Lanarkshire	0.601 9.059				0.000	0.000	0.000	0.00% 0.00%
	SKELLYTON STW Upgrade	WasteWater	Quality	0.000			10/7/12		South Lanarkshire	12.253				0.000	0.000		0.00%
	Skerries WTW - Upgrade	Water	Quality	0.000				31/3/09	Shetland Islands	0.070	0.000			0.056	0.000	0.000	0.00%
	Sludge Treatment Capital Maintenance - NE Sludge Treatment Capital Maintenance - NW	WasteWater WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	2.221 6.173	0.001 0.003			0.003 0.015	0.016 0.165		100.00% 100.00%
	Sludge Treatment Capital Maintenance - SE	WasteWater	Base	0.000					N/A	6.255	0.003			0.031	0.341	6.257	100.00%
	Sludge Treatment Capital Maintenance - SW	WasteWater	Base	0.000					Scottish Water Wide	6.511	0.003			0.018	0.194		100.00%
	Sludge Treatment Capital Maintenance - SWW South Hov Heldale WTW - Upgrade	WasteWater Water	Base Quality	0.000			28/7/08	31/3/09	Scottish Water Wide Orkney Islands	2.673 0.149	0.001 0.000				0.334 0.000	2.674 0.000	100.00% 0.00%
	South Moorhouse New WTW - Upgrade	Water	Quality	0.000	0.108	5.279	23/9/08		East Renfrewshire	5.387	0.000			3.852	1.086	0.000	0.00%
	South Uist Stoneybridge WTW - Upgrade	Water	Quality	0.000	0.104		23/9/08	31/3/10	Western Isles	5.209	0.000			3.724	1.050	0.000	0.00%
	South Yell WTW - Upgrade Southdean Mill WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/08 28/7/13		Shetland Islands Scottish Borders	1.008 0.162	0.000			0.604 0.000	0.000	0.000	0.00% 0.00%
	Spey Scheme Badentinan WTW - Upgrade	Water	Quality	0.012			10/7/08	31/3/10		22.420	0.192			13.034	0.790		2.74%
30894	SPRINGFIELD STW Upgrade	WasteWater	Quality	0.000	0.000	0.923	11/3/12	31/3/13	Fife	0.923	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	SPRINGFIELD STW Upgrade SPS - OPS REACTIVE SPEND SCOTLAND WIDE	WasteWater WasteWater	Quality Base	0.000	0.000		11/3/12	31/3/13	Fife Scottish Water Wide	1.817 3.565	0.000 0.002			0.440 0.446	1.298 0.446	0.415 3.566	22.86% 100.00%
	SPS - SVCW SCOTLAND WIDE	WasteWater	Base	0.295					Scottish Water Wide	14.761	0.002				1.845		100.00%
	SPS Capital Maintenance - NE		Base	0.085					Scottish Water Wide	4.236					0.074		

		Coner	I Project Informat	tion							Eins	neial Informatio	n of Chosen Sce	anda		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or		Info IDE	Non IDE	Non John	Forecast /			T-1-1 04011		Devices	Devices	Devices	Devlant	Proportion of	Proportion of
		wastewater project		Infra - IRE	Non IRE	Non - Infra Proportion of	Actual – Project,	Forecast / Actual -		Total Q&SIII Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	SPS Capital Maintenance - NW	WasteWater	Base	0.047					Scottish Water Wide	2.356	0.001		0.000	0.007	0.041		
	SPS Capital Maintenance - SW SPS Capital Maintenance - SWW	WasteWater WasteWater	Base Base	0.243 0.102					Scottish Water Wide Scottish Water Wide	12.135 5.087	0.005 0.002		0.000	0.043 0.007	0.269 0.047		
	2 ST MARGARETS HOPE E.O.2 SEPTIC - Completion	WasteWater	Quality	0.000					Scottish Water Wide	0.043	0.000		0.000	0.000	0.000		
	Staffin WTW - Upgrade	Water	Quality	0.000			28/7/13		Highland	0.181	0.000		0.000	0.000	0.000	0.000	0.00%
	STEVENSTON POINT HEADWORKS STW Refurb STEVENSTON WWT SERVICE (PFI STW) Upgrade	WasteWater WasteWater	Base Quality	0.000			24/2/09 10/7/08		North Ayrshire North Ayrshire	1.823 12.853	0.001 0.000		0.085 0.896	0.916 6.396	0.808 5.445		
	Stoer WTW - Upgrade	Water	Quality	0.000			28/7/13		Highland	0.287	0.000		0.000	0.000	0.000	0.000	
3090	STONEHOUSE STW - SCC	WasteWater	Quality	0.000	0.000	0.601	11/3/12	31/3/13	South Lanarkshire	0.601	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	STONEHOUSE STW Refurb STONEHOUSE STW Upgrade	WasteWater WasteWater	Base Quality	0.000			23/9/12		East Ayrshire South Lanarkshire	0.324 5.224	0.000		0.004 0.000	0.027 0.000	0.292 0.000		
	Stornoway STW - STC	WasteWater	Quality	0.000			22/11/12		Western Isles	3.495	0.000		0.000	0.000	0.000	0.000	
3091	Stornoway WTW - Upgrade	Water	Quality	0.000	0.090	4.423	24/12/08	31/3/10	Western Isles	4.513	0.000	0.181	0.821	3.380	0.131	0.000	0.00%
	STOW STW Upgrade STRATHAVEN STW Upgrade	WasteWater WasteWater	Quality Quality	0.000			11/3/12 23/9/12		Borders, The South Lanarkshire	0.718 7.187	0.000		0.000	0.000	0.000	0.000 0.000	
	STRATHBLANE STW Upgrade	WasteWater	Quality	0.000			24/12/12	31/3/14		1.410	0.000		0.000	0.000	0.000		
3091	STRATHCARRON WTW - Completion	Water	Quality	0.000	0.006	0.299			Scottish Water Wide	0.305	0.000	0.305	0.000	0.000	0.000	0.000	0.00%
	S STRATHMIGLO STW Upgrade 7 Strathyre WTW - Upgrade	WasteWater Water	Quality Quality	0.000			24/12/12 28/7/08	31/3/14 31/3/09		1.143 0.161	0.000		0.000 0.023	0.000 0.129	0.000		
	Strichen STW Upgrade	WasteWater	Quality	0.000			11/3/13		Aberdeenshire	0.522	0.000		0.000	0.000	0.000		
	STROLLAMUS WTW - Completion	Water	Quality	0.000		0.433			Scottish Water Wide	0.442	0.000		0.000	0.000	0.000	0.000	0.00%
	STROLLAMUS WTW - Upgrade Stronsay WTW - Upgrade	Water Water	Quality Quality	0.000			10/4/08 28/7/13		Scottish Water Wide Orkney Islands	0.634 0.173	0.000		0.212 0.000	0.384 0.000	0.000	0.000 0.000	
	2 Strontian WTW - Opgrade	Water	Quality	0.000			10/4/08		Highland	0.622	0.000		0.208	0.377	0.000		
	STW - OPS REACTIVE SPEND SCOTLAND WIDE	WasteWater	Base	0.000					Scottish Water Wide	13.334	0.006		1.667	1.667	1.667		
	STW - SVCW SCOTLAND WIDE STW Capital Maintenance - NE	WasteWater WasteWater	Base Base	0.000					Scottish Water Wide N/A	55.279 20.268	0.023 0.007		6.901 0.006	6.918 0.037	6.953 0.404	55.302 20.275	100.00% 100.00%
	STW Capital Maintenance - NW	WasteWater	Base	0.000					N/A	8.047	0.003		0.002	0.016	0.169		
	7 STW Capital Maintenance - SE	WasteWater	Base	0.000					N/A	15.466	0.005		0.003	0.028	0.287	15.472	100.00%
	STW Capital Maintenance - SW SUDS Capital Maintenance - NE	WasteWater WasteWater	Base Base	0.000 2.706					N/A Scottish Water Wide	33.041 2.700	0.011 0.006		0.011 0.338	0.103 0.338	1.000 0.338	33.051 2.706	100.00% 100.00%
	SUDS Capital Maintenance - NW	WasteWater	Base	0.739					Scottish Water Wide	0.737	0.002		0.092	0.092	0.092	0.739	
	SUDS Capital Maintenance - SE	WasteWater	Base	3.363					Scottish Water Wide	3.356	0.007		0.419	0.419	0.419		
	2 SUDS Capital Maintenance - SW 3 SWINSTIE STW - SCC	WasteWater WasteWater	Base Quality	3.177 0.000			25/12/11	31/3/13	Scottish Water Wide North Lanarkshire	3.170 1.689	0.007 0.000		0.396 0.000	0.396 0.000	0.396 0.000		
	SWINSTIE STW (CLELAND) Upgrade	WasteWater	Quality	0.000			22/11/12		North Lanarkshire	4.332	0.000		0.000	0.000	0.000		
	SWINTON STW Upgrade	WasteWater	Quality	0.000			11/3/13		Borders, The	0.914	0.000		0.000	0.000	0.000		
	S SWO - Blairlinn & Lenziemill Ind Estates SWO - Commerce Rd	WasteWater WasteWater	Quality Quality	0.000			25/4/13 11/6/09		North Lanarkshire Dumfries and Galloway	1.132 0.822	0.000		0.000 0.026	0.000 0.083	0.000 0.713		
	SWO - Cumbernauld	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.210	0.000		0.041	0.119	1.048		
	SWO - Dales Industrial Estate C	WasteWater	Quality	0.000			27/8/13		Aberdeenshire	0.136	0.000		0.000	0.000	0.000		
	SWO - Dales Industrial Estate E SWO - Eastield SWO	WasteWater WasteWater	Quality Quality	0.000			27/8/13 11/6/09		Aberdeenshire North Lanarkshire	0.324 0.557	0.000		0.000 0.018	0.000 0.056	0.000 0.484	0.000 0.000	
3094	SWO - Nether Stenton SWO	WasteWater	Quality	0.000	1.387	0.245	27/4/09	31/3/10		1.631	0.000		0.055	0.160	1.412		
	SWO - Righead - SWDs	WasteWater	Quality	0.000			27/8/13		North Lanarkshire	0.457	0.000		0.000	0.000	0.000		
	SWO - Southfield SWO SWO - SW Asset East Tullos Burn Industrial Estate SWS	WasteWater WasteWater	Quality Quality	0.000			27/8/09 11/6/13	31/3/10 31/3/14	Fife Aberdeen, City Of	0.130 0.699	0.000		0.003 0.000	0.010 0.000	0.117 0.000		
3094	SWO - SW Asset West Tullos Industrial Estate SWS	WasteWater	Quality	0.000	0.903	0.159	25/4/13	31/3/14	Aberdeen, City Of	1.062	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	SWO - SWA - Deans Industrial Estate North SWO	WasteWater	Quality	0.000			07/0/40		West Lethian	0.099	0.000		0.000	0.000	0.000		
	SWO - SWA - Greendykes Industrial Estate SWO SWO - SWA - Gyle SWO	WasteWater WasteWater	Quality Quality	0.000			27/8/13 27/8/13		West Lothian Edinburgh, City Of	0.479 0.296	0.000		0.000	0.000	0.000	0.000 0.000	
3095	SWO - SWA - Houstoun Industrial Estate	WasteWater	Quality	0.000	0.208	0.037	27/8/13	31/3/14	West Lothian	0.244	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	SWO - SWA - Houstoun Industrial Estate North SWO	WasteWater	Quality	0.000			27/8/13		West Lothian	0.139	0.000		0.000	0.000	0.000		
	SWO - SWA - Pentland Industrial Estate SWO (WPC/E/4979) SWO - SWA - Pentland Retail Park SWO (WPC/E/5662)	WasteWater WasteWater	Quality Quality	0.000			27/8/13		Midlothian Midlothian	0.103 0.133	0.000		0.000	0.000	0.000	0.000	
	SWO - SWA - Polmadie Industrial Estate - Surface Water drainage	WasteWater Water	Quality	0.000			27/8/13 24/1/08		Glasgow, City Of Aberdeenshire	0.224	0.000		0.000	0.000	0.000	0.000	0.00% 37.56%
	Tanarside Aboyne WTW - Upgrade TARBERT WTW - Completion	Water	Quality Quality	0.012 0.000			24/1/08		Scottish Water Wide	1.547 0.722	0.000		0.390 0.000	1.076 0.000	0.000	0.581 0.000	
3095	7 Tarbert WTW - Upgrade	Water	Quality	0.000	0.038	1.845	24/1/08	31/3/09	N/A	1.883	0.000	0.119	0.633	1.131	0.000	0.000	0.00%
	3 Tarskavaig WTW - Upgrade	Water	Quality	0.000			11/4/07		Highland	0.526	0.033		0.339	0.000	0.000		
	TARVES STW Upgrade TAYNUILT STW Upgrade	WasteWater WasteWater	Quality Quality	0.000			11/3/13	31/3/14	Aberdeenshire Argyll & Bute	0.589 1.563	0.000		0.000 0.411	0.000 0.943	0.000 0.135		
3096	1 TEALING STW Upgrade	WasteWater	Quality	0.000	0.000	0.764	11/3/13	31/3/14	Angus	0.764	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	2 Telemetry - Business Interface - NE	WasteWater	Base	0.000					Scottish Water Wide	0.023	0.000		0.012	0.000	0.000		
,	d from plan due to errors or duplication	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.023	0.000	0.012	0.012	0.000	0.000	0.023	100.00%

R – Removed from plan due to errors or duplication.

		Genera	I Project Informa	tion							Fina	ncial Informatio	n of Chosen Sco	mario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Whiteres					Engage /									Description of	Description of
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project				Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Project - %
	Telemetry - Business Interface - NW Telemetry - Business Interface - NW	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.028 0.028	0.000 0.000				0.000		100.00% 100.00%
	Telemetry - Business Interface - NVV	WasteWater	Base	0.000					Scottish Water Wide	0.028	0.000			0.000	0.000		100.00%
	Telemetry - Business Interface - SE	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.012	0.000	0.006	0.006	0.000	0.000	0.012	100.00%
	Telemetry - Business Interface - SW	WasteWater Water	Base	0.000					Scottish Water Wide	0.011 0.011	0.000			0.000	0.000		100.00%
	Telemetry - Business Interface - SW Telemetry - Coverage Expansion - NE	WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	2.916	0.000 0.500			0.000 0.364	0.000 0.364		100.00% 100.00%
	Telemetry - Coverage Expansion - NE	Water	Base	0.000	0.000	3.416			Scottish Water Wide	2.916	0.500	0.364	0.364	0.364	0.364	3.416	100.00%
	Telemetry - Coverage Expansion - NW	WasteWater	Base	0.000					Scottish Water Wide	3.446	0.591				0.431	4.037	100.00%
	Telemetry - Coverage Expansion - NW Telemetry - Coverage Expansion - SE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	3.446 1.406	0.591 0.241			0.431 0.176	0.431 0.176	4.037 1.647	100.00% 100.00%
	Telemetry - Coverage Expansion - SE	Water	Base	0.000					Scottish Water Wide	1.406	0.241	0.176			0.176		100.00%
	Telemetry - Coverage Expansion - SW	WasteWater	Base	0.000					Scottish Water Wide	1.475					0.184		100.00%
	Telemetry - Coverage Expansion - SW Telemetry - Data Quality - NE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	1.475 1.678	0.253 0.000			0.184 0.000	0.184 0.000		100.00% 100.00%
	Telemetry - Data Quality - NE Telemetry - Data Quality - NE	Water	Base	0.000					Scottish Water Wide	1.678	0.000			0.000	0.000		100.00%
30980	Telemetry - Data Quality - NW	WasteWater	Base	0.000	0.000	1.993			Scottish Water Wide	1.993	0.000	0.996	0.996	0.000	0.000	1.993	100.00%
	Telemetry - Data Quality - NW Telemetry - Data Quality - SE	Water WasteWater	Base	0.000					Scottish Water Wide	1.993 0.888	0.000			0.000	0.000		100.00% 100.00%
	Telemetry - Data Quality - SE Telemetry - Data Quality - SE	Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.888	0.000				0.000		100.00%
	Telemetry - Data Quality - SW	WasteWater	Base	0.000	0.000	0.817			Scottish Water Wide	0.817	0.000			0.000	0.000		100.00%
	Telemetry - Data Quality - SW	Water	Base	0.000					Scottish Water Wide	0.817	0.000			0.000	0.000		100.00%
	Telemetry - Decision Support Telemetry - Decision Support	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.281 0.281	0.000				0.000		100.00% 100.00%
	Telemetry - Environmental Quality - NE	WasteWater	Quality	0.000					Scottish Water Wide	0.758	0.000				0.095		0.00%
	Telemetry - Environmental Quality - NW	WasteWater	Quality	0.000					Scottish Water Wide	0.900	0.000				0.112		0.00%
	Telemetry - Environmental Quality - SE Telemetry - Environmental Quality - SW	WasteWater WasteWater	Quality Quality	0.000					Scottish Water Wide Scottish Water Wide	0.409 0.376	0.000			0.051 0.047	0.051 0.047	0.000	0.00% 0.00%
	Telemetry - First time Communications - NE	Water	Base	0.408					Scottish Water Wide	0.817	0.000				0.102		100.00%
	Telemetry - First time Communications - NW	Water	Base	0.480	0.000	0.480			Scottish Water Wide	0.960	0.000	0.120	0.120	0.120	0.120	0.960	100.00%
	Telemetry - First time Communications - SE	Water	Base	0.224					Scottish Water Wide	0.448	0.000				0.056		100.00%
	Telemetry - First time Communications - SW Telemetry - First time Power Supplies - NE	Water WasteWater	Base Base	0.206					Scottish Water Wide Scottish Water Wide	0.412 0.508	0.000			0.051 0.064	0.051 0.064	0.412 0.508	100.00% 100.00%
	Telemetry - First time Power Supplies - NE	Water	Base	0.000					Scottish Water Wide	0.508	0.000				0.064		100.00%
	Telemetry - First time Power Supplies - NW	WasteWater	Base	0.000					Scottish Water Wide	0.604	0.000			0.075	0.075	0.604	100.00%
	Telemetry - First time Power Supplies - NW Telemetry - First time Power Supplies - SE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.604 0.276	0.000			0.075 0.035	0.075 0.035		100.00% 100.00%
	Telemetry - First time Power Supplies - SE	Water	Base	0.000					Scottish Water Wide	0.276	0.000			0.035	0.035		100.00%
31002	Telemetry - First time Power Supplies - SW	WasteWater	Base	0.000	0.000	0.254			Scottish Water Wide	0.254	0.000	0.032	0.032	0.032	0.032	0.254	100.00%
	Telemetry - First time Power Supplies - SW	Water	Base	0.000					Scottish Water Wide	0.254	0.000			0.032	0.032		100.00%
	Telemetry - New Monitoring Sites - WasteWater - NE Telemetry - New Monitoring Sites - WasteWater - NW	WasteWater WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.095 0.113	0.000				0.012 0.014		100.00% 100.00%
	Telemetry - New Monitoring Sites - WasteWater - SE	WasteWater	Base	0.000					Scottish Water Wide	0.050	0.000			0.006	0.006	0.050	100.00%
	Telemetry - New Monitoring Sites - WasteWater - SW	WasteWater	Base	0.000					Scottish Water Wide	0.046	0.000			0.006	0.006	0.046	100.00%
	Telemetry - New Monitoring Sites - Water - NE Telemetry - New Monitoring Sites - Water - NW	Water Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.432 0.513					0.054 0.064		100.00% 100.00%
	Telemetry - New Monitoring Sites - Water - 1444 Telemetry - New Monitoring Sites - Water - SE	Water	Base	0.000					Scottish Water Wide	0.237					0.030		100.00%
31011	Telemetry - New Monitoring Sites - Water - SW	Water	Base	0.000	0.000	0.218			Scottish Water Wide	0.218	0.000				0.027		100.00%
	Telemetry - Power Optimisation Schemes - NE Telemetry - Power Optimisation Schemes - NE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.071 0.071	0.000				0.014 0.014		100.00% 100.00%
	Telemetry - Power Optimisation Schemes - NE Telemetry - Power Optimisation Schemes - NW	WasteWater	Base	0.000					Scottish Water Wide	0.071					0.014		100.00%
31015	Telemetry - Power Optimisation Schemes - NW	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.085	0.000	0.017	0.017	0.017	0.017	0.085	100.00%
	Telemetry - Power Optimisation Schemes - SE	WasteWater	Base	0.000					Scottish Water Wide	0.038	0.000						100.00%
	Telemetry - Power Optimisation Schemes - SE Telemetry - Power Optimisation Schemes - SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.038 0.035	0.000			0.008 0.007	0.008 0.007		100.00% 100.00%
	Telemetry - Power Optimisation Schemes - SW	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.035	0.000			0.007	0.007		
	Telemetry - Project IO	WasteWater	Base	0.000	0.000	2.925			Scottish Water Wide	2.925				0.000	0.000	2.925	100.00%
	Telemetry - Project IO Telemetry - Remote Control - development - NE	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	2.925 0.118	0.000				0.000 0.059		100.00% 100.00%
	Telemetry - Remote Control - development - NE Telemetry - Remote Control - development - NE	Water	Base	0.000					Scottish Water Wide	0.118	0.000				0.059		100.00%
31024	Telemetry - Remote Control - development - NW	WasteWater	Base	0.000	0.000	0.139			Scottish Water Wide	0.139	0.000	0.000	0.000	0.070	0.070	0.139	100.00%
	Telemetry - Remote Control - development - NW	Water	Base	0.000					Scottish Water Wide	0.139	0.000			0.070	0.070		100.00%
	Telemetry - Remote Control - development - SE Telemetry - Remote Control - development - SE	WasteWater Water	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.062 0.062	0.000			0.031 0.031	0.031 0.031	0.062 0.062	100.00% 100.00%
	Telemetry - Remote Control - development - SW		Base	0.000					Scottish Water Wide	0.057							
					-		-					-					

		Genera	l Project Informat	tion							Fina	ncial Informatio	n of Chosen Sco	nario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Whiteres					Engage /									Description of	Description of
		Water or wastewater		Infra - IRE	Non IRE	Non - Infra	Forecast / Actual –			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
-																,	
	Telemetry - Remote Control - development - SW Telemetry - RTU Expansion - NE	Water WasteWater	Base Quality	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.057 0.333	0.000			0.029 0.042	0.029 0.042		100.00% 0.00%
	Telemetry - RTU Expansion - NE	Water	Quality	0.000					Scottish Water Wide	0.333	0.000				0.042		0.00%
	Telemetry - RTU Expansion - NW	WasteWater	Quality	0.000					Scottish Water Wide	0.383	0.000			0.048	0.048		0.00%
	Telemetry - RTU Expansion - NW Telemetry - RTU Expansion - SE	Water WasteWater	Quality Quality	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.383 0.177	0.000			0.048 0.022	0.048 0.022		0.00% 0.00%
	Telemetry - RTU Expansion - SE	Water	Quality	0.000					Scottish Water Wide	0.177	0.000				0.022		0.00%
	Telemetry - RTU Expansion - SW	WasteWater	Quality	0.000	0.000				Scottish Water Wide	0.163	0.000			0.020	0.020		0.00%
	Telemetry - RTU Expansion - SW Telemetry - RTU Framework Renewal	Water WasteWater	Quality Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.163 0.036	0.000			0.020 0.000	0.020 0.000		0.00% 100.00%
	Telemetry - RTU Framework Renewal	Water	Base	0.000					Scottish Water Wide	0.036	0.000			0.000	0.000		100.00%
	Telemetry - RTU Replacement - NE	WasteWater	Base	0.000	0.000	1.512			Scottish Water Wide	1.512	0.000		0.189	0.189	0.189	1.512	100.00%
	Telemetry - RTU Replacement - NE Telemetry - RTU Replacement - NW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	1.512 1.795	0.000				0.189 0.224		100.00% 100.00%
	Telemetry - RTU Replacement - NW	Water	Base	0.000	0.000				Scottish Water Wide	1.795	0.000				0.224		100.00%
31044	Telemetry - RTU Replacement - SE	WasteWater	Base	0.000	0.000	0.800			Scottish Water Wide	0.800	0.000	0.100	0.100	0.100	0.100	0.800	100.00%
	Telemetry - RTU Replacement - SE Telemetry - RTU Replacement - SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.800 0.742	0.000			0.100 0.093	0.100 0.093		100.00% 100.00%
	Telemetry - RTU Replacement - SW	Water	Base	0.000	0.000				Scottish Water Wide	0.742				0.093	0.093		100.00%
	Telemetry - System Upgrades - NE	Water	Base	0.926					Scottish Water Wide	1.853				0.000	1.853		100.00%
	Telemetry - System Upgrades - NW Telemetry - System Upgrades - SE	Water Water	Base Base	1.100 0.500	0.000				Scottish Water Wide Scottish Water Wide	2.200 1.000	0.000			0.000	2.200 1.000		100.00% 100.00%
	Telemetry - System Opgrades - SU	Water	Base	0.460					Scottish Water Wide	0.919				0.000	0.919		100.00%
	Telemetry - Telemetry Training - NE	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.023	0.000			0.000	0.000		100.00%
	Telemetry - Telemetry Training - NE Telemetry - Telemetry Training - NW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.023 0.028	0.000			0.000	0.000		100.00% 100.00%
	Telemetry - Telemetry Training - NW	Water	Base	0.000	0.000				Scottish Water Wide	0.028	0.000			0.000	0.000		100.00%
	Telemetry - Telemetry Training - SE	WasteWater	Base	0.000					Scottish Water Wide	0.012	0.000			0.000	0.000	0.012	100.00%
	Telemetry - Telemetry Training - SE Telemetry - Telemetry Training - SW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.012 0.011	0.000			0.000	0.000		100.00% 100.00%
	Telemetry - Telemetry Training - SW	Water	Base	0.000					Scottish Water Wide	0.011	0.000			0.000	0.000		100.00%
	Telemetry - Water Abstraction and Impoundment - NE	Water	Quality	0.000					Scottish Water Wide	0.193	0.000			0.048	0.048		0.00%
	Telemetry - Water Abstraction and Impoundment - NW Telemetry - Water Abstraction and Impoundment - SE	Water Water	Quality Quality	0.000	0.000				Scottish Water Wide Scottish Water Wide	1.589 0.478	0.000			0.397 0.120	0.397 0.120		0.00% 0.00%
	Telemetry - Water Abstraction and Impoundment - SU	Water	Quality	0.000	0.000				Scottish Water Wide	0.396	0.000			0.099	0.099		0.00%
	Telemetry - Water Metering - NE	WasteWater	Base	0.000					Scottish Water Wide	1.295	0.000			0.259	0.259		100.00%
	Telemetry - Water Metering - NE Telemetry - Water Metering - NW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	1.295 1.521	0.000				0.259 0.304		100.00% 100.00%
	Telemetry - Water Metering - NW	Water	Base	0.000					Scottish Water Wide	1.521	0.000				0.304		100.00%
	Telemetry - Water Metering - SE	WasteWater	Base	0.000	0.000				Scottish Water Wide	0.685	0.000				0.137		100.00%
	Telemetry - Water Metering - SE Telemetry - Water Metering - SW	Water WasteWater	Base Base	0.000	0.000				Scottish Water Wide Scottish Water Wide	0.685 0.630	0.000				0.137 0.126		100.00% 100.00%
	Telemetry - Water Metering - SW	Water	Base	0.000	0.000				Scottish Water Wide	0.630	0.000			0.126	0.126		100.00%
	Telemetry - Water Quality - NE	Water	Quality	0.000	0.000	0.376			Scottish Water Wide	0.376	0.000	0.047	0.047	0.047	0.047	0.000	0.00%
	Telemetry - Water Quality - NW Telemetry - Water Quality - SE	Water Water	Quality Quality	0.000					Scottish Water Wide Scottish Water Wide	0.446 0.206					0.056 0.026		0.00% 0.00%
31075	Telemetry - Water Quality - SW	Water	Quality	0.000	0.000	0.189			Scottish Water Wide	0.189	0.000	0.024	0.024	0.024	0.024	0.000	0.00%
	Telemetry - Water Supply System Control - NE	WasteWater	Base	0.000					Scottish Water Wide	0.110	0.000						100.00%
	Telemetry - Water Supply System Control - NE Telemetry - Water Supply System Control - NW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.110 0.130	0.000				0.022 0.026		100.00% 100.00%
	Telemetry - Water Supply System Control - NW	Water	Base	0.000					Scottish Water Wide	0.130					0.026		100.00%
	Telemetry - Water Supply System Control - SE	WasteWater	Base	0.000					Scottish Water Wide	0.058	0.000						100.00%
	Telemetry - Water Supply System Control - SE Telemetry - Water Supply System Control - SW	Water WasteWater	Base Base	0.000					Scottish Water Wide Scottish Water Wide	0.058 0.054	0.000				0.012 0.011	0.058 0.054	100.00% 100.00%
	Telemetry - Water Supply System Control - SW	Water	Base	0.000	0.000	0.000			Scottish Water Wide	0.054	0.000	0.011	0.011	0.011	0.011	0.054	100.00%
	Terregles WTW - Upgrade	Water	Quality	0.011			25/1/09		Dumfries And Galloway	1.064					0.001	0.528	49.64%
	Tighnabruaich New WTW - Upgrade Tiree WTW - Upgrade	Water Water	Quality Quality	0.000			24/12/08 25/1/09		Argyll And Bute Argyll And Bute	3.346 2.003	0.000				0.097 0.001	0.000 0.687	0.00% 34.28%
	Tobermory WTW - Upgrade	Water	Quality	0.000	0.037	1.835	24/1/08		Argyll And Bute	1.872	0.000			1.121	0.000	0.000	0.00%
	TOLSTA MID ST Upgrade	WasteWater	Quality	0.000			11/3/13		Scottish Water Wide	0.982					0.000		0.00%
	Tomatin WTW - Upgrade Tomich WTW - Upgrade	Water Water	Quality Quality	0.000			24/1/07 24/1/08		Highland Highland	1.337 1.319	0.092 0.000				0.000		0.00% 0.00%
	TORPHICHEN STW Upgrade	WasteWater	Quality	0.000			25/12/11		West Lothian	1.019	0.000				0.000		0.00%
	Torra WTW - Upgrade	Water	Quality	0.000			10/4/08		Argyll And Bute	0.772				0.468	0.000		0.00%
31093	Torridon WTW - Upgrade	Water	Quality	0.000	0.008	0.375	28/7/08	31/3/09	Highland	0.383	0.000	0.019	0.056	0.308	0.000	0.000	0.00%

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	2	3	4	- 6	7		12	13	14	16	17	18	19	20	21	30	31
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project	Projects over	Projects over	Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	•																
31094	Torrin WTW - Upgrade	Water	Quality	0.000	0.011	0.517	10/4/08	31/3/09	Highland	0.528	0.000	0.031	0.177	0.320	0.000	0.000	0.00%
	Touch WTW - Upgrade	Water	Quality	0.000			23/9/08	31/3/10		5.526	0.000	0.136			1.114		0.00%
	TOWN YELTHOLM STW - Completion	WasteWater	Quality	0.000					Scottish Water Wide	0.163	0.000	0.163		0.000	0.000		0.00%
	Transfer of flow from works	WasteWater	Quality	0.000					Scottish Water Wide	15.510	0.000	0.000		0.000	0.000		0.00%
	TRISLAIG WTW - Completion Troqueer STW - Sludge Digestion	Water WasteWater	Quality Quality	0.000			10/7/12	21/2/1/	Scottish Water Wide Dumfries & Galloway	0.504 14.213	0.000 0.000	0.504 0.000		0.000	0.000		0.00% 0.00%
	Tullich WTW - Upgrade	Water	Quality	0.023			10/7/08		Argyll And Bute	10.783	0.000	0.237		7.158	2.762		10.67%
	Turret WTW - Upgrade	Water	Quality	0.033			10/7/08		Perth And Kinross	14.812	0.116	0.607			0.477		11.08%
	TURRIFF STW Upgrade	WasteWater	Quality	0.000			25/12/11		Aberdeenshire	1.370	0.000	0.000		0.000	0.000		0.00%
	Turriff WTW - Upgrade	Water	Quality	0.057			23/9/08		Aberdeenshire	6.728 1.485	0.001	0.168 0.096		3.691	2.033		42.17%
	Tweedsmuir WTW - Upgrade TYNDRUM STW Refurb	Water WasteWater	Quality Base	0.000			24/1/08 24/2/09	31/3/10	Scottish Borders Stirling	2.218	0.000 0.001	0.096		0.889 1.114	0.000 0.984	0.000 2.219	0.00% 100.00%
	TYNDRUM STW Upgrade	WasteWater	Quality	0.000			24/12/08		Scottish Water Wide	2.245	0.000	0.000		0.649	1.478		0.00%
31107	Tyndrum WTW - Upgrade	Water	Quality	0.000	0.025	1.220	24/1/08	31/3/09	Stirling	1.244	0.000	0.080	0.419	0.745	0.000	0.000	0.00%
	UID - 101 Old Castle Road	WasteWater	Quality	0.000			27/8/12		Glasgow City	0.480	0.000	0.000		0.000	0.000		0.00%
	UID - 109 London Road Kilmarnock UID - 120m NE Skellyton Bridge Meadowhill Street?	WasteWater WasteWater	Quality Quality	0.000			24/2/09 24/2/09		East Ayrshire South Lanarkshire	2.486 4.455	0.016 0.016	0.006 0.055		0.245 0.743	2.150 3.500		0.00% 0.00%
31110	OID - 12011 14E OKENYTON DRINGE MEANOWING Streets	AAGSICAAGIGI	Quality	0.000	3.600	0.671	2412103	3 1/3/10	COULT EQUALISME	4.435	0.016	0.035	0.130	0.143	3.300	0.000	0.00%
	UID - 130m East of 1 Gilmour Place Gartsherrie Road Coatbridge		Quality	0.000			27/4/09		North Lanarkshire	1.329	0.016	0.003		0.132	1.148		0.00%
	UID - 14 Walnut Road Kilmarnock	WasteWater	Quality	0.000			27/8/08		East Ayrshire	0.464	0.016	0.012		0.414	0.000		0.00%
	UID - 186 Ardgay Street (Rear of No.182 - 186) UID - 2 Burns Avenue Kilmarnock	WasteWater WasteWater	Quality Quality	0.000			25/4/13 24/2/09		Glasgow City East Ayrshire	1.812 2.913	0.000 0.016	0.000 0.036		0.000 0.486	0.000 2.287		0.00% 0.00%
	UID - 2 Maxholm Road Kilmarnock	WasteWater	Quality	0.000			11/6/08		East Ayrshire	0.549	0.016	0.038		0.474	0.000		0.00%
	UID - 20 Merryburn Avenue	WasteWater	Quality	0.000			27/4/09		East Renfrewshire	2.029	0.000	0.005		0.199	1.757		0.00%
	UID - 200 Firpark Street Dennistoun	WasteWater	Quality	0.000			11/6/09		Glasgow City	0.517	0.000	0.000		0.041	0.464		0.00%
31118	UID - 200m East of 39 Kirkwood Street Dunbeth Coatbridge	WasteWater	Quality	0.000	1.839	0.324	27/4/09	31/3/10	North Lanarkshire	2.147	0.016	0.006	0.073	0.212	1.857	0.000	0.00%
31119	UID - 200m West of Holmfield Cottages 18 Waterside Road Kirkintilloch	WasteWater	Quality	0.000	0.446	0.079	11/6/09	31/3/10	East Dunbartonshire	0.525	0.000	0.000	0.013	0.041	0.470	0.000	0.00%
	UID - 22 Alnwickhill Road Edinburgh	WasteWater	Quality	0.000			24/2/09		City of Edinburgh	2.788	0.016	0.093		1.857	0.659		0.00%
	UID - 22 Douglas Street Kilmarnock	WasteWater	Quality	0.000			23/2/09		East Ayrshire	5.069	0.016	0.063			3.983		0.00%
	UID - 22 Holehouse Road Kilmarnock	WasteWater	Quality	0.000			24/2/09		East Ayrshire	2.946	0.016	0.037			2.313		0.00%
	UID - 237 South Street Whiteinch UID - 245 Corkerhill Road Mosspark	WasteWater	Quality	0.000			11/6/13 11/6/12		Glasgow City Glasgow City	0.619 0.546	0.000 0.000	0.000		0.000	0.000		0.00% 0.00%
	UID - 25 - 27 Loreny Drive Kilmarnock	WasteWater WasteWater	Quality Quality	0.000			23/2/09		East Ayrshire	5.714	0.016	0.000			3.480		0.00%
	UID - 26 Mayfield Avenue Stranraer	WasteWater	Quality	0.000			11/6/12		Dumfries and Galloway	0.630	0.000	0.000		0.000	0.000		0.00%
31127	UID - 28 Bank Street Wigtown	WasteWater	Quality	0.000	2.022	0.357	25/4/13	31/3/14	Dumfries and Galloway	2.378	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31128	UID - 28 Bankhead Road 10m North West of footbridge Kirkintilloch	WasteWater	Quality	0.000	0.392	0.069	27/8/09	31/3/10	East Dunbartonshire	0.461	0.000	0.000	0.011	0.036	0.413	0.000	0.00%
	UID - 3 Braefoot Terrace Edinburgh	WasteWater	Quality	0.000			23/2/09		City of Edinburgh	5.500	0.016	0.110		1.930	3.349		0.00%
	UID - 32 Old Street Kilmarnock	WasteWater	Quality	0.000			27/4/09		East Ayrshire	1.181	0.016	0.003			1.020		0.00%
	UID - 36 New Mill Road Kilmarnock	WasteWater	Quality	0.000			27/4/09		East Ayrshire	2.317	0.016	0.006		0.229	2.004		0.00%
	UID - 38 Merryburn Avenue UID - 4 Meadowbank Lane - Uddingston	WasteWater WasteWater	Quality Quality	0.000			27/4/09 27/8/08		East Renfrewshire South Lanarkshire	1.947 0.467	0.000	0.005 0.012		0.191 0.418	1.685 0.000		0.00% 0.00%
	UID - 41 Holmhead Place	WasteWater	Quality	0.000			27/8/12		Glasgow City	0.480	0.000	0.000		0.000	0.000		0.00%
31135	UID - 41 MacDonald Drive Kilmarnock	WasteWater	Quality	0.000					East Ayrshire	0.484	0.016	0.012		0.432	0.000		0.00%
31136	UID - 4-10 Darnley Street at Maxwell Road Pollokshields	WasteWater	Quality	0.000	1.442	0.254	25/4/13		Glasgow City	1.696	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - 46 Bruce Street Kilmarnock	WasteWater	Quality	0.000			24/2/09		East Ayrshire	2.821		0.035			2.215		0.00%
	UID - 47 Langbar Crescent at Delny Place UID - 47 Parkhouse Road Ardrossan	WasteWater WasteWater	Quality Quality	0.000			24/2/09 27/8/08		Glasgow City North Ayrshire	2.636 0.464	0.000 0.016	0.007 0.012		0.259 0.414	2.281 0.000		0.00% 0.00%
	UID - 48 Park Burn Court Hamilton	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.591		0.053			0.046		
	UID - 50m East of Heritage Way Gartsherrie Branch Canal																
31141	Coatbridge UID - 50m South of Jct. Burnfoot Road / Whinhall Road between	WasteWater	Quality	0.000	2.332	0.412	24/2/09	31/3/10	North Lanarkshire	2.728	0.016	0.034	0.096	0.456	2.141	0.000	0.00%
31142	15 and 17 Burnfoot Road	WasteWater	Quality	0.000	0.562	0.099	11/6/08	31/3/09	North Lanarkshire	0.645	0.016	0.021	0.067	0.558	0.000	0.000	0.00%
	UID - 51 Main Road (behind) Crookedholm Hurlford	WasteWater	Quality	0.000			24/2/09		East Ayrshire	3.052		0.038			2.396		
	UID - 54 Bruce Street Kilmarnock	WasteWater	Quality	0.000	2.517	0.444	24/2/09		East Ayrshire	2.945	0.016	0.037	0.104	0.492	2.312	0.000	0.00%
	UID - 57 Old Castle Road	WasteWater	Quality	0.000			27/8/12		Glasgow City	0.467	0.000	0.000		0.000	0.000		0.00%
31146	UID - 60 Beech Avenue Newton Mearns	WasteWater	Quality	0.000	1.4/8	0.261	27/4/09	31/3/10	East Renfrewshire	1.738	0.000	0.004	0.059	0.171	1.505	0.000	0.00%
31147	UID - 60 High Street 30m East of Braehead Street Kirkintilloch	WasteWater	Quality	0.000	1.320	0.233	27/4/09	31/3/10	East Dunbartonshire	1.553	0.000	0.004	0.052	0.152	1.344	0.000	0.00%
31148	UID - 65 Shore Street Edinburgh	WasteWater	Quality	0.000	1.909	0.337	25/4/13	31/3/14	City of Edinburgh	2.246	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - 6A / 8 Ross Street Dunbeth Coatbridge	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.571		0.004			1.358		0.00%
	UID - 7 Duke Street Creetown UID - 70 m North East of 140 Muirhouse Avenue Motherwell	WasteWater WasteWater	Quality Quality	0.000			24/2/13 11/6/09		Dumfries and Galloway North Lanarkshire	2.911 0.546	0.000 0.000	0.000		0.000 0.055	0.000 0.474		0.00% 0.00%
	UID - 70m East of Townhead Roundabout Kirkintilloch	WasteWater	Quality	0.000			27/4/09		East Dunbartonshire	1.618		0.004			1.401	0.000	0.00%
31153	UID - 80 Carron Avenue Kilmarnock	WasteWater	Quality	0.000	1.724	0.304	27/4/09	31/3/10	East Ayrshire	2.012	0.016	0.005	0.068	0.199	1.739	0.000	0.00%
	UID - 83 Mountcastle Drive North Edinburgh	WasteWater	Quality	0.000			23/2/09		City of Edinburgh	5.652		0.113		1.984	3.442		0.00%
31155	UID - 86 Carron Avenue Kilmarnock UID - 89 Dundyvan Road 20m West of Dundyvan Road	WasteWater	Quality	0.000	1.724	0.304	27/4/09	31/3/10	East Ayrshire	2.012	0.016	0.005	0.068	0.199	1.739	0.000	0.00%
31156	Coatbridge	WasteWater	Quality	0.000	0.425	0.075	27/8/08	31/3/09	North Lanarkshire	0.484	0.016	0.012	0.040	0.432	0.000	0.000	0.00%
	UID - 89 Old Castle Road	WasteWater	Quality	0.000	0.524	0.093	11/6/12		Glasgow City	0.617		0.000			0.000		0.00%
31158	UID - 94 Low Pleasance at Drygate Street	WasteWater	Quality	0.000				31/3/10	South Lanarkshire	0.927		0.000			0.803		

	2	Gener	al Project Informa	tion	7	_	12	13	14	16	Fina 17	ncial Informatio	n of Chosen Sce	nario 20	21	Capital Ma	intenance 31
	£	-	-		-	•	12	13	14	10	11	10	19	20	- 21	- 30	- 31
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
Decinet		project	Devices		Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure Profile	Maintenance Element of	Maintenance Element of
Project Autocode	Project Title	(primary purpose)	Project Classification 1	£100k	£100k	Projects over £100k	Construction Start Date	Project, Beneficial Use Date	Local Authority	(2006 - 2014 inc)	Expenditure Pre 2006/07	Profile 2006/07	Profile 2007/08	Profile 2008/09	2009/10	Project - £m	Element of Project - %
Passonado	Fragesia Fine	por project	Cassinosoni	E 1990	E I WOR	ETOON	Otari Data	D-010	Sough Post for the	1 100	F10 2000F07	200000	2007700	200000	2000:10	F TOTOGE - EST	F 100004 - 70
21150	UID - 95 Redbrae Road at Kenilworth Road Kirkintilloch	MactoMator	Quality	0.000	1.301	0.230	27/4/09	21/2/10	East Dunhartenshire	1.530	0.000	0.004	0.052	0.150	1 225	0.000	0.00%
	UID - Adelphi Street 20m East of Commercial Road	WasteWater WasteWater	Quality	0.000			11/6/13		East Dunbartonshire Glasgow City	0.619	0.000	0.004	0.000	0.000	1.325 0.000		0.00% 0.00%
	UID - Adelphi Street 20m West of Waddell Street	WasteWater	Quality	0.000	0.530	0.093	11/6/13	31/3/14	Glasgow City	0.623	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Adelphi Street 30m East of Gorbals Street	WasteWater	Quality	0.000			11/6/13		Glasgow City	0.969	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Adelphi Street 50m West of Crown St(Not College) UID - Adelphi Street adj to Ballater Street	WasteWater WasteWater	Quality Quality	0.000			11/6/13 27/8/13		Glasgow City Glasgow City	0.546 0.500	0.000	0.000	0.000	0.000	0.000		0.00% 0.00%
	UID - Adelphi Street at (in Mosque) at Mosque Avenue	WasteWater	Quality	0.000			25/4/13		Glasgow City	1.843	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Adelphi Street at (Not College) Hospital Street	WasteWater	Quality	0.000			25/4/13		Glasgow City	2.310	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Adelphi Street at (Sheriff Court) Gorbals Street UID - Adelphi Street at Commercial Road	WasteWater WasteWater	Quality Quality	0.000			25/4/13 11/6/13		Glasgow City Glasgow City	1.330 0.615	0.000	0.000	0.000	0.000	0.000		0.00% 0.00%
	UID - Adelphi Street at Crown Street	WasteWater	Quality	0.000			11/6/13		Glasgow City	0.658	0.000	0.000	0.000	0.000	0.000		0.00%
31170	UID - Adelphi Street at Florence Street	WasteWater	Quality	0.000	1.898	0.335	25/4/13		Glasgow City	2.233	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Adelphi Street at McNeil Street	WasteWater	Quality	0.000	1.633		25/4/13		Glasgow City	1.921	0.000	0.000	0.000	0.000	0.000		0.00%
311/2	UID - Adj to 2 Albany Wynd at 8 George Way UID - Adj to Black Burn 80m West of Lammermoor Road 21 Ross	WasteWater	Quality	0.000	2.434	0.429	24/2/09	S 1/S/10	South Lanarkshire	2.847	0.016	0.035	0.101	0.476	2.235	0.000	0.00%
	Avenue Kirkintilloch	WasteWater	Quality	0.000	1.399	0.247	27/4/09	31/3/10	East Dunbartonshire	1.646	0.000	0.004	0.055	0.161	1.425	0.000	0.00%
	UID - Adj. Old Railway Rear of 76 Kelvin Drive west side of Bothlin		Quality	0.000	4.000	0.330	07/4/00	2412140	North Lanorkohir	0.000	0.000	0.000	0.075	0.000	4 020	0.000	0.000/
31174 31175	UID - Allotments Behind 63 Connaught Place Edinburgh	WasteWater WasteWater	Quality Quality	0.000	1.903 0.440		27/4/09 11/6/13		North Lanarkshire City of Edinburgh	2.238 0.517	0.000	0.006	0.075 0.000	0.220 0.000	1.938 0.000	0.000	0.00% 0.00%
310			1									2.220	2.223				
	UID - At junction of Bell Street (east side) and Spoutmouth Street	WasteWater	Quality	0.000	0.480	0.085	11/6/09	31/3/10	Glasgow City	0.565	0.000	0.000	0.018	0.057	0.490	0.000	0.00%
	UID - At junction of Bell Street (east side) and Spoutmouth Street (GN no 50)	WasteWater	Quality	0.000	0.464	0.082	11/6/09	31/3/10	Glasgow City	0.546	0.000	0.000	0.017	0.055	0.474	0.000	0.00%
	UID - At junction of Clyde Street and Dixon Street	WasteWater	Quality	0.000			11/6/13		Glasgow City	0.623	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - At junction of Clyde Street and Jamaica Street (Glasgow N																
31179	no 59) UID - At junction of Clyde Street and Maxwell Street (1) - 2 shown	WasteWater	Quality	0.000	0.523	0.092	11/6/13	31/3/14	Glasgow City	0.615	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	at this location	WasteWater	Quality	0.000	0.425	0.075	27/8/13	31/3/14	Glasgow City	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - At junction of Clyde Street and Maxwell Street (2) - 2 shown																
31181	at this location UID - At junction of Fordneuk Street and (GN no 19) Avenue	WasteWater	Quality	0.000	0.534	0.094	11/6/13	31/3/14	Glasgow City	0.628	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31182		WasteWater	Quality	0.000	0.568	0.100	11/6/13	31/3/14	Glasgow City	0.668	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - At junction of Greendyke Street and Turnbull Street (GN no																
31183	51) UID - At junction of No 50 Walkinshaw Street & Queen Mary	WasteWater	Quality	0.000	0.440	0.078	11/6/09	31/3/10	Glasgow City	0.517	0.000	0.000	0.013	0.041	0.464	0.000	0.00%
31184	Street Glasgow Green	WasteWater	Quality	0.000	0.480	0.085	11/6/13	31/3/14	Glasgow City	0.565	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - At the Broomielaw between Robertson Street & Oswald																
31185		WasteWater	Quality	0.000			11/6/13		Glasgow City	0.615	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - At the rear of factory at Nos 2 to 6 Pleasance Street UID - At West side of Great Eastern Hotel Duke Street (Glasgow N	WasteWater	Quality	0.000	0.440	0.078	11/6/12	31/3/13	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31187	` •	WasteWater	Quality	0.000	0.397	0.070	27/8/09	31/3/10	Glasgow City	0.467	0.000	0.000	0.012	0.037	0.418	0.000	0.00%
	UID - Auchengeich STW	WasteWater	Quality	0.000	0.464		11/6/09		North Lanarkshire	0.546	0.000	0.000	0.017	0.055	0.474		0.00%
	UID - Ayrshire Metals Cochrane St @ Victoria Roundabout UID - Baillieston Road	WasteWater WasteWater	Quality Quality	0.000	8.984 0.480		1/12/08 11/6/13		North Ayrshire Glasgow City	10.553 0.565	0.016 0.000	0.211 0.000	0.211	3.699 0.000	6.431 0.000	0.000	0.00% 0.00%
	UID - Ballachulish Storm King at WwTP	WasteWater	Quality	0.000			24/2/09		Highland	4.979	0.000	0.100	0.100	1.743	3.037		0.00%
31192	UID - Balmoral Street Pumping Station	WasteWater	Quality	0.000	0.425	0.075	27/8/13	31/3/14	Glasgow City	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Baltic Place UID - Banchory Bridge CSO-12DWF	WasteWater WasteWater	Quality Quality	0.000			11/6/13 25/4/13		Glasgow City Aberdeenshire	0.628 1.175	0.000	0.000	0.000	0.000	0.000		0.00% 0.00%
	UID - Bank Street Ivy Cottage Creetown	WasteWater	Quality	0.000			27/8/12		Dumfries and Galloway	0.484	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Barassie P.S. 72 Beach Road Troon	WasteWater	Quality	0.000	4.682	0.826	23/2/09	31/3/10	South Ayrshire	5.492	0.016	0.110	0.110	1.928	3.344	0.000	0.00%
	UID - Beach Drive NW corner of Magnum Centre Irvine	WasteWater	Quality	0.000			11/6/08		North Ayrshire	0.544	0.016	0.018	0.056	0.470	0.000		0.00%
	UID - Beach Road Beach Park P.S. Irvine No1 UID - Beattock Wynd - Beattock Wynd - 1 Broughton Place -	WasteWater	Quality	0.000	0.436	0.077	11/6/08	31/3/09	North Ayrshire	0.497	0.016	0.013	0.040	0.443	0.000	0.000	0.00%
31199	Hamilton	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.446	0.000	0.048	0.129	1.227	0.041	0.000	0.00%
31200	UID - Beechcroft Pumping Station EO	WasteWater	Quality	0.000	0.758	0.134	11/6/13	31/3/14	Glasgow City	0.892	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31201	UID - Behind 1 Wester Coates Place (Cauldrons Weir) Edinburgh	WasteWater	Quality	0.000	2.583	0.456	24/2/13	31/3/14	City of Edinburgh	3.038	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31202	UID - Behind 12 Ventnor Place Edinburgh	WasteWater	Quality	0.000	2.939	0.519	24/2/09	31/3/10	City of Edinburgh	3.441	0.016	0.114	0.220	2.290	0.816	0.000	0.00%
	UID - Behind 13 Ventnor Terrace Edinburgh	WasteWater	Quality	0.000			23/2/09		City of Edinburgh	5.463	0.016	0.110	0.110	1.918	3.326		0.00%
	UID - Behind 15 Glenisla Gardens Edinburgh UID - Behind 33 Warriston Crescent Edinburgh	WasteWater WasteWater	Quality Quality	0.000			1/12/08 27/8/13		City of Edinburgh City of Edinburgh	10.449 0.467	0.016 0.000	0.209 0.000	0.209	3.663 0.000	6.368 0.000		0.00% 0.00%
	UID - Behind Bells Mills House Edinburgh	WasteWater	Quality	0.000	1.158	0.204	25/4/13		City of Edinburgh	1.363	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Behind Donaldsons School for the Deaf Edinburgh	WasteWater	Quality	0.000			11/6/13		City of Edinburgh	0.546	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Behind The Hilton Hotel Belford Rd Edinburgh UID - Below Railway Bridge Adj. to Bank Street Coatbridge	WasteWater WasteWater	Quality Quality	0.000			11/6/13 27/4/09		City of Edinburgh North Lanarkshire	0.546 1.251	0.000 0.016	0.000 0.042	0.000 0.113	0.000 1.076	0.000 0.020		0.00% 0.00%
	UID - Between Sawmill Road & Castlebank Crescent Castlebank																
31210		WasteWater	Quality	0.000			11/6/13		Glasgow City	0.668	0.000	0.000	0.000	0.000	0.000		0.00%
	UID - Blackford Avenue at Charterhall Rd Edinburgh UID - Blackford Avenue at Powburn Edinburgh	WasteWater WasteWater	Quality Quality	0.000			24/2/09 1/12/08		City of Edinburgh City of Edinburgh	2.593 10.222	0.016 0.016	0.086 0.205	0.234 0.205	2.214 3.583	0.059 6.230		0.00% 0.00%
	UID - Blackhall No.1 C.S.O. Paisley	WasteWater	Quality	0.000			27/8/12		Renfrewshire	0.480	0.000	0.000	0.000	0.000	0.000		0.00%
	LIID. Disabball Comban 450, 1200 Ct.	\A// \A/-	0														
	UID - Blackhall Syphon 150yrd NW of Jennys Well Road Paisley UID - Bogfoot Road 370m from Main Street Salsburgh	WasteWater WasteWater	Quality Quality	0.000			27/8/12 27/8/12		Renfrewshire North Lanarkshire	0.467 0.480	0.000	0.000	0.000	0.000	0.000		0.00% 0.00%
	UID - Bonnington Industrial Estate Edinburgh	WasteWater	Quality	0.000			11/6/13		City of Edinburgh	0.480	0.000	0.000	0.000	0.000	0.000		0.00%
31217	UID - Bridge Street (Telford Bridge) Penicuik	WasteWater	Quality	0.000	0.450		11/6/09	31/3/10	Midlothian	0.514	0.016	0.000	0.017	0.053	0.444	0.000	0.00%
	UID - Broadcroft Road at 40 Lion Bank Kirkintilloch UID - Broomvale Drive Rear of No 40 (11 Knowes Road)	WasteWater WasteWater	Quality Quality	0.000			11/6/09 24/2/09		East Dunbartonshire East Renfrewshire	0.540 2.994	0.000	0.000 0.037	0.017 0.105	0.054 0.497	0.469 2.354		0.00% 0.00%
	UID - Burnbank Road at Whitehill Road at path	WasteWater	Quality	0.000			11/6/08		South Lanarkshire	0.738	0.000	0.037	0.103	0.640	0.000		0.00%
31221	UID - Burnfoot Road at Whinhall Road	WasteWater	Quality	0.000	0.408	0.072	27/8/08	31/3/09	North Lanarkshire	0.464	0.016	0.012	0.038	0.414	0.000	0.000	0.00%
	UID - Burngrange Bridge 1 Motherwell UID - Burngrange Bridge 2 Motherwell Shields Road nr Dodside	WasteWater	Quality	0.000	0.397	0.070	27/8/09	31/3/10	North Lanarkshire	0.467	0.000	0.000	0.012	0.037	0.418	0.000	0.00%
31223		WasteWater	Quality	0.000	0.397	0.070	27/8/09	31/3/10	North Lanarkshire	0.467	0.000	0.000	0.012	0.037	0.418	0.000	0.00%
	from plan due to errors or duplication.		,														

		Gener	al Project Informat	tion								to the second second second	n of Chosen Sce				aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
		project		Proportion of	Proportion of	Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014		Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Project - %
																ı	
	UID - Cairndhu Pumping Station	WasteWater	Quality	0.000	1.460 0.408	0.258 0.072	27/4/09		Argyll And Bute	1.718 0.464	0.000 0.016		0.058	0.169 0.414			
	UID - Cameron Street Coatbridge UID - Camore Judges Court SPS EO	WasteWater WasteWater	Quality Quality	0.000	2.286	0.403	27/8/08 24/2/13		North Lanarkshire Highland	2.690	0.000		0.038 0.000	0.000			
31227	UID - Carlton Place at Nicholson Street	WasteWater	Quality	0.000	0.480	0.085	11/6/13	31/3/14	Glasgow City	0.565	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Carlton Place at South Portland Street	WasteWater	Quality	0.000	1.296 0.440	0.229	25/4/13		Glasgow City	1.525	0.000		0.000	0.000			
	UID - Carmichael Place UID - Carpark at South Circular Road Dunbeath	WasteWater WasteWater	Quality Quality	0.000	0.440	0.078 0.086	11/6/12 11/6/08		Glasgow City North Lanarkshire	0.517 0.560	0.000 0.016		0.000 0.058	0.000 0.484			
31231	UID - Cartside Street at Sinclair Drive	WasteWater	Quality	0.000	0.526	0.093	11/6/12	31/3/13	Glasgow City	0.619	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Castle Brae CSO Kirkcaldy	WasteWater	Quality	0.000	0.524	0.093	11/6/09	31/3/10		0.617	0.000		0.019	0.062			
	UID - Castle Point (Caravan Site) Rockcliffe PS UID - Castlehill - Laverock Avenue - Hamilton	WasteWater WasteWater	Quality Quality	0.000	3.016 0.627	0.532 0.111	24/2/13 11/6/08		Dumfries and Galloway South Lanarkshire	3.548 0.738	0.000		0.000 0.074	0.000 0.640			
	UID - Charlotte Street Helensburgh	WasteWater	Quality	0.000	0.410		27/8/09		Argyll And Bute	0.483	0.000		0.012	0.038			
24020	UID - Clippens PS East of Clippens Road Footbridge Linwood	WasteWater	Quality	0.000	0.408	0.072	27/8/12	2412142	Renfrewshire	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Clippens PS East of Clippens Road Footbridge Linwood UID - Clyde Industrial Estate Rutherglen	WasteWater	Quality	0.000	0.448		11/6/12		South Lanarkshire	0.480	0.000		0.000	0.000			
31238	UID - Clyde Place at Centre Street	WasteWater	Quality	0.000	0.397	0.070	27/8/13	31/3/14	Glasgow City	0.467	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Clyde Place at Commerce Street UID - Clyde Place at Tradeston Street	WasteWater WasteWater	Quality Quality	0.000	1.385 0.464	0.244 0.082	25/4/13 11/6/13		Glasgow City Glasgow City	1.629 0.546	0.000		0.000 0.000	0.000			
31240	OID - Olyas Flace at Hadesion offeet	AAGSICAAGIGI	Quality	0.000	0.404	0.062	11/0/13	3 1/3/ 14	Oldayow Oily	0.346	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		WasteWater	Quality	0.000	2.277	0.402	24/2/13		Glasgow City	2.679	0.000		0.000	0.000		0.000	0.00%
	UID - Clydesdale Avenue at Douglas Crescent UID - Clydeway Expressway South of Sandyford Street	WasteWater WasteWater	Quality Quality	0.000	1.275 0.466	0.225 0.082	27/4/09 11/6/13		South Lanarkshire Glasgow City	1.499 0.548	0.000		0.134 0.000	1.273 0.000			
	UID - Coalhill CSO Edinburgh	WasteWater	Quality	0.000	0.559	0.099	11/6/13		City of Edinburgh	0.658	0.000		0.000	0.000			
	UID - Cockenzie Street (Rear of No 48) (No 2 on Glasgow N list) UID - Colgrain Pumping Station	WasteWater WasteWater	Quality Quality	0.000	1.091 2.032	0.193 0.359	27/4/09 27/4/09		Glasgow City Argyll And Bute	1.284 2.391	0.000		0.043 0.081	0.126 0.235			
	UID - Comiston Road at 1 Braid Hills Road Edinburgh	WasteWater	Quality	0.000	4.267	0.753	23/2/09		City of Edinburgh	5.004	0.016		0.320	3.326			
	UID - Corkerhill Road at Alness Crescent Mosspark	WasteWater	Quality	0.000	0.436	0.077	11/6/12		Glasgow City	0.512	0.000		0.000	0.000			
	UID - Corkerhill Road at Arisaig Drive Mosspark UID - Corkerhill Road at Mosspark Drive Mosspark	WasteWater WasteWater	Quality Quality	0.000	0.450 0.408	0.079 0.072	11/6/12 27/8/12		Glasgow City Glasgow City	0.530 0.480	0.000 0.000		0.000	0.000			
	UID - Cowdenbeath WWPS & Storm Tank	WasteWater	Quality	0.000	0.526	0.093	11/6/09	31/3/10		0.619	0.000		0.020	0.062			
	UID - Craigendoran (Pier) Pumping Station Helensburgh	WasteWater	Quality	0.000	2.200	0.388	24/2/09		Argyll And Bute	2.588	0.000		0.087	0.254			
	UID - Craigendoran Avenue Pumping Station Helensburgh UID - Creetown Barholm Factory	WasteWater WasteWater	Quality Quality	0.000	1.230 0.411	0.217 0.073	27/4/09 27/8/12		Argyll And Bute Dumfries and Galloway	1.447 0.484	0.000		0.049 0.000	0.142 0.000			
	UID - Cressy Street off Govan Road in Ship Yards	WasteWater	Quality	0.000	0.564	0.099	11/6/13		Glasgow City	0.663	0.000		0.000	0.000			
	UID - Cross Keys 142 Harbour Street Irvine	WasteWater	Quality	0.000	0.397	0.070	27/8/08		North Ayrshire	0.451	0.016		0.037	0.403			
	UID - Crossford WwTP Storm Tank Overflow UID - Cumberland Avenue Pumping Station	WasteWater WasteWater	Quality Quality	0.000	0.382 0.431	0.067 0.076	27/8/09 11/6/09		South Lanarkshire Argyll And Bute	0.449 0.507	0.000		0.011 0.016	0.035 0.051			
	UID - Cumbrae Terrace	WasteWater	Quality	0.000	2.028	0.358	27/4/09	31/3/10	Fife	2.386	0.000	0.006	0.080	0.234	2.066	0.000	0.00%
	UID - Dalderse WwTP >9DWF Storm Overflow	WasteWater	Quality	0.000	1.722	0.304	25/4/13	31/3/14		2.026	0.000		0.000	0.000			
	UID - Dalmarnock WwTP Inlet CSO UID - Damshot Crescent Pollok Relief Sewer	WasteWater WasteWater	Quality Quality	0.000	0.466 4.608	0.082 0.813	11/6/09 21/2/13		Glasgow City Glasgow City	0.548 5.421	0.000		0.017 0.000	0.055 0.000			
31263	UID - Dean Park Pavilion Kilmarnock	WasteWater	Quality	0.000	2.818	0.497	24/2/09	31/3/10	East Ayrshire	3.299	0.016	0.041	0.117	0.551	2.591	0.000	0.00%
	UID - Dee St PS CSO	WasteWater	Quality	0.000	0.439		11/6/12		Aberdeenshire	0.516			0.000	0.000			
	UID - Demolished S.T.W Storm Tanks Newton Mearns UID - Den Burn/East Burn Phase 2	WasteWater WasteWater	Quality Quality	0.000	6.214 0.619	1.097 0.109	23/2/09 11/6/09	31/3/10	East Renfrewshire Fife	7.310 0.728	0.000		0.146 0.023	1.170 0.073	5.848 0.631	0.000	
31267	UID - Dora Golf Course Cowdenbeath	WasteWater	Quality	0.000	0.425	0.075	27/8/09	31/3/10	Fife	0.500	0.000	0.000	0.012	0.040	0.448	0.000	0.00%
	UID - Dornoch PS/Comminutors Shore Road UID - Dornoch SSO (Sewer Storage Structure) nr Dornoch	WasteWater	Quality	0.000	2.216	0.391	24/2/13	31/3/14	Highland	2.608	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	PS/Comminutors	WasteWater	Quality	0.000	2.038	0.360	25/4/13	31/3/14	Highland	2.398	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Dornoch SST (Sewer Storage Structure) in grounds of																
	Carlingbank Hotel UID - Doune Crescent rear of No 11	WasteWater WasteWater	Quality Quality	0.000	2.794 1.453	0.493 0.256	24/2/13 27/4/09		Highland East Renfrewshire	3.287 1.709	0.000 0.000		0.000 0.058	0.000 0.168	0.000 1.480		
	UID - Downiebrae Road Farme Estate Shieldhall No 39	WasteWater	Quality	0.000	0.450	0.079	11/6/12		South Lanarkshire	0.530	0.000		0.000	0.000			
	UID - Downiebrae Road Farme Estate Shieldhall No 40	WasteWater	Quality	0.000	0.425	0.075	27/8/12		South Lanarkshire	0.500	0.000		0.000	0.000			
	UID - Drum Park WWPS Lower Largo UID - Drummochy Road Lower Largo	WasteWater WasteWater	Quality Quality	0.000	0.376 1.529	0.066 0.270	27/8/09 27/4/09	31/3/10 31/3/10		0.443 1.799	0.000		0.011 0.061	0.035 0.177			
31276	UID - Duke Street at Patrick Street Hamilton	WasteWater	Quality	0.000	1.286	0.227	27/4/09	31/3/10	South Lanarkshire	1.513	0.000	0.050	0.135	1.284	0.043	0.000	0.00%
	UID - Dundee Drive Kinnell (via Henderson Burn Culvert)	WasteWater	Quality	0.000	0.464	0.082	11/6/12		Glasgow City	0.546	0.000		0.000	0.000			
	UID - DUNNIKIER ROAD UID - Earlsferry/Cadgers Wynd WWPS Earlsferry	WasteWater WasteWater	Quality Quality	0.000	0.495 1.338	0.087 0.236	11/6/09 27/4/09	31/3/10 31/3/10		0.583 1.575	0.000		0.018 0.053	0.059 0.154			
	UID - Eastwood High School Auldhouse Burn / Capelrig Burn																
	North of Buchanan Drive UID - Eddlewood - 27 Austine Drive - Hamilton	WasteWater WasteWater	Quality	0.000	3.265	0.576	24/2/09		East Renfrewshire South Lanarkshire	3.841	0.000		0.135	0.638		0.000	
	UID - Eddiewood - 27 Austine Drive - Hamilton UID - Edinburgh Road	WasteWater	Quality Quality	0.000	0.694 0.772	0.123 0.136	11/6/08 11/6/09		Glasgow City	0.817 0.909	0.000		0.082 0.029	0.709 0.092			
31283	UID - Elder Street off Govan Road in Ship Yards	WasteWater	Quality	0.000	0.464	0.082	11/6/13		Glasgow City	0.546	0.000		0.000	0.000			
	UID - Elderslie / Old Patrick Water No.2 C.S.O. 242 Main Road at Elderslie Bridge Elderslie	WasteWater	Quality	0.000	1.345	0.237	27/4/09	2412140	Renfrewshire	1.566	0.016	0.004	0.053	0.155	1.354	0.000	0.00%
	UID - Elderslie / Old Patrick Water No.3 C.S.O. (Burnbrae Road.)	vvastevvatel	Quanty	0.000	1.040	0.237	2114109	3 1/3/10	I CHILDWOILLE	1.000	0.016	0.004	0.033	0.100	1.004	0.000	0.00%
31285	Main (Road) Outfall Overflow Elderslie	WasteWater	Quality	0.000	1.998	0.353	27/4/09	31/3/10	Renfrewshire	2.334	0.016	0.006	0.079	0.231	2.018	0.000	0.00%
	UID - Elderslie / Old Patrick Water No.4 CSO. Rear of Wallace Tre Inn Elderslie	WasteWater	Quality	0.000	1.291	0.228	27/4/09	31/3/40	Renfrewshire	1.503	0.016	0.004	0.051	0.149	1.299	0.000	0.00%
	UID - Elizabeth Cres PS EO	WasteWater	Quality	0.000	2.362	0.417	24/2/13		Highland	2.778	0.000		0.000	0.000			
	UID - Elliston Ejector / Pumping Station 25 Elliston Road																
31288	Howwood Johnstone	WasteWater	Quality	0.000	0.408	0.072	27/8/09	31/3/10	Renfrewshire	0.464	0.016	0.000	0.012	0.038	0.414	0.000	0.00%

R – Removed from plan due to errors or duplication.

		Genera	Project Informat	tion							Fina	ncial Informatio	n of Chosen Sce	nario		Capital Ma	aintenan
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	3
		100					-										
		Water or					Forecast /									Proportion of	Propor
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Cap
		project				Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Mainte
ct		(primary	Project			Projects over		Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Elem
ode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Proie
		WasteWater	Quality	0.000	4.170		24/2/09		East Ayrshire	4.890	0.016	0.061	0.173	0.815	3.842		
		WasteWater WasteWater	Quality Quality	0.000	2.345 2.397		24/2/13 24/2/13		Highland Highland	2.759 2.820	0.000 0.000		0.000	0.000	0.000		
	IID - Embo No. 2 Pumping Station	WasteWater	Quality	0.000	2.024		25/4/13		Highland	2.381	0.000		0.000	0.000	0.000		
		WasteWater	Quality	0.000	1.904		25/4/13		Highland	2.240	0.000		0.000	0.000	0.000		
	IID - Emergency Outfall Burnbrae Pumping Station Lyon Road																
31294 L		WasteWater	Quality	0.000	0.425	0.075	27/8/12	31/3/13	Renfrewshire	0.500	0.000	0.000	0.000	0.000	0.000	0.000	
	IID - Emergency Overflow from Sewage Pumping station Adj. To strathclyde Chemicals High Street	WasteWater	Quality	0.000	0.425	0.075	27/8/09	21/2/10	Renfrewshire	0.484	0.016	0.000	0.012	0.040	0.432	0.000	
	IID - Emergency Overflow from Sewage Pumping Station Hagg	vvastevvatei	Quality	0.000	0.423	0.073	21/0/03	3 1/3/10	Keillewällie	0.404	0.016	0.000	0.012	0.040	0.432	0.000	
	fill 3 Bevan Grove Johnstone	WasteWater	Quality	0.000	0.397	0.070	27/8/09	31/3/10	Renfrewshire	0.451	0.016	0.000	0.012	0.037	0.403	0.000	
L	IID - Emergency Overflow Pipe from Sewage Pumping Station																
	Clark Street	WasteWater	Quality	0.000	0.425		27/8/09		Renfrewshire	0.484	0.016	0.000	0.012	0.040			
		WasteWater	Quality	0.000	0.499		11/6/09		Western Isles	0.587	0.000		0.019	0.059	0.510		
	IID - EYRE PLACE	WasteWater	Quality	0.000	0.559		11/6/13		City of Edinburgh	0.658	0.000		0.000	0.000	0.000		
		WasteWater WasteWater	Quality Quality	0.000	0.408 1.387		27/8/09 27/4/09	31/3/10 31/3/10	Argyll And Bute	0.480 1.632	0.000 0.000		0.012 0.055	0.038 0.160	0.430 1.413		
		WasteWater	Quality	0.000	0.429		11/6/09		Argyll And Bute	0.504	0.000		0.033	0.040	0.452		
	•							2 5/ 10									
	•	WasteWater	Quality	0.000	1.636	0.289	27/4/09		Argyll And Bute	1.924	0.000		0.065	0.189	1.666		
	IID - Foot of Sinclair Street	WasteWater	Quality	0.000	0.410		27/8/09		Argyll And Bute	0.483	0.000		0.012	0.038	0.433		
		WasteWater	Quality	0.000	1.306		25/4/13		Dumfries and Galloway	1.537	0.000		0.000	0.000	0.000		
		WasteWater	Quality	0.000	0.397		27/8/09		East Renfrewshire	0.467	0.000		0.012	0.037	0.418		
		WasteWater WasteWater	Quality Quality	0.000	0.464 0.532		11/6/09 11/6/09		South Lanarkshire Glasgow City	0.530 0.625	0.016 0.000		0.017 0.020	0.055 0.063	0.458 0.543		
		WasteWater	Quality	0.000	0.532		11/6/09		Glasgow City	0.625	0.000		0.020	0.063	0.543		
		WasteWater	Quality	0.000	1.368		27/4/09		East Ayrshire	1.594	0.016		0.054	0.158	1.378		
		WasteWater	Quality	0.000	10.366		1/12/08		East Ayrshire	12.179	0.016		0.244	4.268	7.423		
312 L	IID - Gillsburn Gardens Kilmarnock	WasteWater	Quality	0.000	0.440	0.078	11/6/09	31/3/10	East Ayrshire	0.502	0.016	0.000	0.013	0.041	0.448	0.000	
313 L	IID - Glasgow Green	WasteWater	Quality	0.000	0.572	0.101	11/6/13	31/3/14	Glasgow City	0.673	0.000	0.000	0.000	0.000	0.000	0.000	
		WasteWater	Quality	0.000	0.428		11/6/09		Dumfries and Galloway	0.504	0.000		0.013	0.040	0.452		
		WasteWater	Quality	0.000	0.439		11/6/09		Dumfries and Galloway	0.516	0.000		0.013	0.041	0.463		
		WasteWater	Quality	0.000	0.385		27/8/09		Dumfries and Galloway	0.453	0.000	0.000	0.011	0.036	0.406		
		WasteWater WasteWater	Quality Quality	0.000	0.400 0.523		27/8/09 11/6/09	31/3/10 31/3/10	Dumfries and Galloway	0.471 0.615	0.000		0.012 0.019	0.037 0.062	0.422 0.534		
		WasteWater	Quality	0.000	1.555		27/4/09	31/3/10		1.830	0.000		0.019	0.180	1.584		
	IID - Gorgie Road Edinburgh	WasteWater	Quality	0.000	0.490		11/6/13		City of Edinburgh	0.576	0.000		0.000	0.000	0.000		
		WasteWater	Quality	0.000	0.526		11/6/08		North Ayrshire	0.604	0.016		0.062	0.522	0.000		
322 L	IID - Govan Road / Ibrox	WasteWater	Quality	0.000	0.568	0.100	11/6/13	31/3/14	Glasgow City	0.668	0.000	0.000	0.000	0.000	0.000		
	IID - Govan Road 40177	WasteWater	Quality	0.000	0.464		11/6/13		Glasgow City	0.546	0.000	0.000	0.000	0.000	0.000		
		WasteWater	Quality	0.000	0.464		11/6/13		Glasgow City	0.546	0.000		0.000	0.000	0.000		
		WasteWater WasteWater	Quality Quality	0.000	1.953 3.422		27/4/09 24/2/09		East Ayrshire	2.281 4.010	0.016 0.016		0.077 0.142	0.225 0.669	1.973 3.150		
		WasteWater	Quality	0.000	0.440		11/6/13		East Ayrshire Glasgow City	0.517	0.000		0.000	0.000	0.000		
	IID - Greenlaw Road No8?		Quality	0.000	0.523		11/6/13		Glasgow City	0.615			0.000	0.000	0.000		
			Quality	0.000	3.495		24/2/13		Dumfries and Galloway	4.112			0.000	0.000	0.000		
1330 L	IID - Grotto CSO D/S of Grotto Bridge	WasteWater	Quality	0.000	0.425	0.075	27/8/09	31/3/10	City of Edinburgh	0.500	0.000	0.000	0.012	0.040	0.448	0.000	
		WasteWater	Quality	0.000	0.532		11/6/09		South Lanarkshire	0.625			0.020	0.063	0.543		
			Quality	0.000	1.190		27/4/09		South Lanarkshire	1.400	0.000		0.125	1.188	0.040		
	IID - Hanover Street Pumping Station Helensburgh IID - Harbour Pumping Station 1 Titchfield Cottage Harbour Road	WasteWater	Quality	0.000	0.410	0.072	27/8/09	31/3/10	Argyll And Bute	0.483	0.000	0.000	0.012	0.038	0.433	0.000	
1334 T	. •	WasteWater	Quality	0.000	2.621	0.463	24/2/09	31/3/10	South Ayrshire	3.068	0.016	0.102	0.197	2.043	0.727	0.000	
			Quality	0.000	9.157		1/12/08		North Ayrshire	10.757	0.016		0.197	3.770	6.555		
		WasteWater	Quality	0.000	1.260		27/4/09		Argyll And Bute	1.482	0.000		0.050	0.145	1.283		
		WasteWater	Quality	0.000	0.471		11/6/09		Argyll And Bute	0.554	0.000		0.017	0.056	0.480		
	WB 11.1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2																
338 L	IID - Helensburgh No. 6 CSO (Colquhoun Street Slipway at Pier)	wasteWater	Quality	0.000	0.468	0.083	11/6/09	31/3/10	Argyll And Bute	0.551	0.000	0.000	0.017	0.056	0.478	0.000	
330 ,	IID - Helenshurgh No. 7 - Hanavar Stroot CSO A Halanah	MactoMater	Quality	0.000	0.471	0.000	11/6/00	24/2/40	Armill And Puto	0.554	0.000	0.000	0.017	0.056	0.480	0.000	
		WasteWater WasteWater	Quality Quality	0.000	0.471	0.083 0.118	11/6/09 11/6/09		Argyll And Bute Argyll And Bute	0.554 0.788	0.000		0.017	0.056			
	IID - Helensburgh No. 9 CSO (George Street) IID - Helensburgh Outfall No.8 Clyde Street ay Hanover Street	vvasievvalei	Quanty	0.000	0.070	0.118	11/0/09	3 1/3/10	MANUAL DULE	0.768	0.000	0.000	0.025	0.079	0.004	0.000	
	delensburgh	WasteWater	Quality	0.000	0.414	0.073	27/8/09	31/3/10	Argyll And Bute	0.487	0.000	0.000	0.012	0.038	0.436	0.000	
			Quality	0.000	1.608		27/4/08		South Lanarkshire	1.887	0.005		0.186	1.638	0.000		
	IID - Hogarth Park (Rear of Parklands Public House Carntyne		L	7	_	Ι Τ						1	П	П			
343 F		WasteWater	Quality	0.000	2.437		24/2/09		Glasgow City	2.867	0.000		0.101	0.476			
		WasteWater	Quality	0.000	0.530	0.093	11/6/08	31/3/09	North Ayrshire	0.607	0.016	0.020	0.063	0.525	0.000	0.000	
	IID - Holmes Road Western Intercepting Sewer Holmes Road	MactoMater	Quality	0.000	4.394	0.775	22/2/02	24/2/40	Fact Avrehira	E 454	0.016	0.064	0.100	0.050	4.049	0.000	
		WasteWater WasteWater	Quality Quality	0.000	0.436		23/2/09 11/6/13		East Ayrshire Glasgow City	5.154 0.512		0.064 0.000	0.182 0.000	0.859 0.000	4.049 0.000		
			Quality	0.000	2.063		25/4/13		Highland	2.427			0.000	0.000	0.000		
		WasteWater	Quality	0.000	1.462		27/4/09		East Ayrshire	1.704	0.016		0.058	0.169	1.473		
		WasteWater	Quality	0.000	0.408		27/8/09		Renfrewshire	0.464	0.016		0.012	0.038	0.414		
	IID - Howwood Pumping Station Sewage Effluent Overflow 23																
	tation Avenue Howwood Johnstone	WasteWater	Quality	0.000	0.384		27/8/09	31/3/10	Renfrewshire	0.436	0.016	0.000	0.011	0.036	0.389		
		WasteWater	Quality	0.000	0.450		11/6/08		North Lanarkshire	0.514	0.016		0.053	0.444	0.000		
1352 L	IID - In Whitecraigs Golf Course No 2	WasteWater	Quality	0.000	1.130	0.199	27/4/09	31/3/10	East Renfrewshire	1.330	0.000	0.003	0.045	0.130	1.151	0.000	
4050 1	IID - In Whitecraigs Golf Course No 3	WasteWater	Quality	0.000	1.130	0.199	27/4/09	31/3/10	East Renfrewshire	1.330	0.000	0.003	0.045	0.130	1.151	0.000	

R – Removed from plan due to errors or duplication.

			Genera	al Project Informat	tion							Finar	ncial Information	of Chosen Sce	nario		Capital Ma	ntenance
	1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
			Water or					Forecast /									Proportion of	Proportion of
			wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
	eniant.		project	Devices		Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance Element of	Maintenance Element of
	roject tocode	Project Title	(primary purpose)	Project Classification 1	£100k	£100k	Projects over £100k	Construction Start Date	Project, Beneficial Use Date	Local Authority	(2006 - 2014 inc)	Pre 2006/07	Profile 2006/07	Profile 2007/08	Profile 2008/09	Profile 2009/10	Element of Project - £m	Element of Project - %
		1 Ispani Tara	80.8000	0.000	2000	210011	a room	0.001.0010		Scores President			200001			2000-10	1000	110000
		UID - Irvine 16 Meadowhead Flygt P.S. junction of Meadowhead																
	31354	Avenue and A78 Irvine UID - Irvine 19 Williamsfields (Sports Club); next to 64 Harbour	WasteWater	Quality	0.000	0.376	0.066	27/8/08	31/3/09	North Ayrshire	0.427	0.016	0.011	0.035	0.381	0.000	0.000	0.00%
	31355	Street Irvine	WasteWater	Quality	0.000	0.425	0.075	27/8/08	31/3/09	North Ayrshire	0.484	0.016	0.012	0.040	0.432	0.000	0.000	0.00%
		UID - Irvine Harbour Pumping Station UID - Irvine River Weir Overflow behind 4 Williamfield Grove	WasteWater	Quality	0.000	1.596	0.282	27/4/09		North Ayrshire	1.862	0.016	0.062	0.168	1.594	0.038	0.000	0.00%
	31337	UID - Johnstone / Black Cart Water No.1 C.S.O. 17B Ladeside	WasteWater	Quality	0.000	3.232	0.570	24/2/09	31/3/10	North Ayrshire	3.787	0.016	0.126	0.242	2.519	0.900	0.000	0.00%
	31358	Drive UID - Johnstone / Black Cart Water No.2 C.S.O. Walkinshaw	WasteWater	Quality	0.000	0.440	0.078	11/6/09	31/3/10	Renfrewshire	0.502	0.016	0.000	0.013	0.041	0.448	0.000	0.00%
	31359	Street at Gas Street Johnstone	WasteWater	Quality	0.000	1.845	0.326	25/4/13	31/3/14	Renfrewshire	2.171	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	21260	UID - Johnstone / Craigbog Burn No.1 C.S.O. 1 Linn Park	\Masta\Mater	Quality	0.000	1 000	0.240	27/4/00	21/2/10	Danfraushira	2 112	0.016	0.005	0.072	0.200	1 926	0.000	0.00%
		Gardens UID - Joppa WWPS Edinburgh	WasteWater WasteWater	Quality Quality	0.000	1.809 4.762	0.319 0.840	27/4/09 23/2/09		Renfrewshire City of Edinburgh	2.112 5.586	0.016 0.016	0.005 0.112	0.072 0.112	0.209 1.961	1.826 3.401	0.000	0.00%
	31362	UID - Junction of Anderson Quay & Cheapside Street	WasteWater	Quality	0.000	0.523	0.092	11/6/13	31/3/14	Glasgow City	0.615	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Junction of Carmichael Place & Cartside Street UID - Junction of Clyde Street & Mart Street	WasteWater WasteWater	Quality Quality	0.000	0.440 0.464	0.078 0.082	11/6/12 11/6/13		Glasgow City Glasgow City	0.517 0.546	0.000	0.000	0.000 0.000	0.000	0.000	0.000	0.00% 0.00%
	31365	UID - Junction of Clyde Street & Merchant Lane	WasteWater	Quality	0.000	0.464	0.082	11/6/13	31/3/14	Glasgow City	0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	ა1366	UID - Junction of Clyde Street & Stockwell Street UID - Junction of Dumbarton Road & Dyke Road - Culvert to	WasteWater	Quality	0.000	0.523	0.092	11/6/13	31/3/14	Glasgow City	0.615	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
_	31367	Clyde	WasteWater	Quality	0.000	0.440	0.078	11/6/13		Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Junction Of Gorbals Street/ Norfolk Street (No.1) UID - Junction Of Gorbals Street/ Norfolk Street (No.2)	WasteWater WasteWater	Quality Quality	0.000	0.464 0.464	0.082 0.082	11/6/13 11/6/13		Glasgow City Glasgow City	0.546 0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.00% 0.00%
	31370	UID - Junction of Lancefield Quay & Elliot Street	WasteWater	Quality	0.000	0.524	0.093	11/6/13	31/3/14	Glasgow City	0.617	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Junction of Lancefield Quay & Hydepark Street UID - Junction of Lancefield Quay & Lancefield Street	WasteWater WasteWater	Quality Quality	0.000	0.534 0.523	0.094 0.092	11/6/13 11/6/13		Glasgow City Glasgow City	0.628 0.615	0.000	0.000	0.000 0.000	0.000	0.000	0.000	0.00% 0.00%
	31373	UID - Junction of South Street & Edzell Street	WasteWater	Quality	0.000	0.466	0.082	11/6/13	31/3/14	Glasgow City	0.548	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Junction of South Street & Jordan Street UID - Junction of South Street & Sawmill Road	WasteWater WasteWater	Quality Quality	0.000	0.495 0.526	0.087 0.093	11/6/13 11/6/13		Glasgow City Glasgow City	0.583 0.619	0.000	0.000	0.000 0.000	0.000	0.000	0.000	0.00% 0.00%
		UID - Junction of South Street & Scotstoun Street	WasteWater	Quality	0.000	0.564	0.099	11/6/13		Glasgow City	0.663	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31377	UID - Junction of South Street and Dilwara Avenue UID - Junction of South Street and Ferryden Street (Glasgow N no	WasteWater	Quality	0.000	0.480	0.085	11/6/13	31/3/14	Glasgow City	0.565	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31378		WasteWater	Quality	0.000	0.440	0.078	11/6/13	31/3/14	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Junction of the Broomielaw & James Watt Street UID - Junction of the Broomielaw & McAlpine Street	WasteWater WasteWater	Quality Quality	0.000	0.480 0.678	0.085 0.120	11/6/13 11/6/13		Glasgow City Glasgow City	0.565 0.798	0.000 0.000	0.000	0.000	0.000	0.000	0.000	0.00% 0.00%
		UID - Junction of the Broomielaw & Robertson Street	WasteWater	Quality	0.000	1.470	0.259	25/4/13		Glasgow City	1.729	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31382	UID - Junction of the Broomielaw & York Street UID - Kilbarchan C.S.O. Milliken Road NE of Kilbarchan Road NR	WasteWater	Quality	0.000	0.906	0.160	25/4/13	31/3/14	Glasgow City	1.066	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31383	Old STW Kilbarchan	WasteWater	Quality	0.000	0.480	0.085	11/6/09	31/3/10	Renfrewshire	0.549	0.016	0.000	0.018	0.057	0.474	0.000	0.00%
	31384	UID - Kings Inch Road Braehead Centre opp Multi Storey car park Renfrew	WasteWater	Quality	0.000	0.440	0.078	11/6/13	31/3/14	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31385	UID - Kirkhill Penicuik	WasteWater	Quality	0.000	0.853	0.150	27/4/09	31/3/10	Midlothian	0.987	0.016	0.000	0.032	0.101	0.854	0.000	0.00%
P		UID - Kirkstyle School; near 33 Carron Avenue Kilmarnock UID - Ladywell School Duke Street	WasteWater WasteWater	Quality Quality	0.000	4.307 0.397	0.760 0.070	23/2/09 27/8/09		East Ayrshire Glasgow City	5.051 0.467	0.016 0.000	0.063 0.000	0.179 0.012	0.842 0.037	3.969 0.418	0.000 0.000	0.00%
"	31388	UID - Laighstonehall Road at 193 Chantinghall Road	WasteWater	Quality	0.000	1.269	0.224	27/4/09	31/3/10	South Lanarkshire	1.493	0.000	0.049	0.134	1.267	0.043	0.000	0.00%
		UID - Lane adj Gospel Hall Muir Street UID - Leslie Avenue Off	WasteWater WasteWater	Quality Quality	0.000	0.898 2.968	0.158 0.524	27/4/08 24/2/09		South Lanarkshire East Renfrewshire	1.056 3.491	0.000	0.033 0.043	0.106 0.123	0.917 0.580	0.000 2.745	0.000	0.00% 0.00%
	31391	UID - Lewis Street New CSO	WasteWater	Quality	0.000	2.933	0.518	24/2/13	31/3/14	Dumfries and Galloway	3.450	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	31392	UID - Loan Burn Storm Water Works UID - Loans/Muirhead/Barassie 2 Barassie PS Near 72 Beach	WasteWater	Quality	0.000	1.292	0.228	27/4/09	31/3/10	Midlothian	1.505	0.016	0.004	0.051	0.149	1.300	0.000	0.00%
R		Road Barassie	WasteWater	Quality	0.000	4.638	0.818	23/2/09		South Ayrshire	5.441	0.016	0.109	0.109	1.910	3.313	0.000	0.00%
		UID - Lomond Street Pumping Station UID - Londubh PS 6	WasteWater WasteWater	Quality Quality	0.000	0.652 2.117	0.115 0.374	11/6/09 25/4/13		Argyll And Bute Highland	0.767 2.491	0.000	0.000	0.024 0.000	0.077 0.000	0.666 0.000	0.000	0.00%
	31396	UID - Longstone Road Edinburgh	WasteWater	Quality	0.000	0.425	0.075	27/8/13	31/3/14	City of Edinburgh	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Loreny P.S. 4 Umberly Road Kilmarnock UID - Lower Largo Works Inlet	WasteWater WasteWater	Quality Quality	0.000	1.838 0.392	0.324 0.069	27/4/09 27/8/09		East Ayrshire Fife	2.147 0.461	0.016 0.000	0.006	0.073 0.011	0.212 0.036	1.856 0.413	0.000 0.000	0.00%
	31399	UID - MacLachlan Road Pumping Station	WasteWater	Quality	0.000	0.408	0.072	27/8/09	31/3/10	Argyll And Bute	0.480	0.000	0.000	0.012	0.038	0.430	0.000	0.00%
		UID - Magnum Car Park (Side of Magnum) Irvine UID - Main Street Lower Largo	WasteWater WasteWater	Quality Quality	0.000	0.440 0.397	0.078 0.070	11/6/08 27/8/09		North Ayrshire Fife	0.502 0.467	0.016 0.000	0.013	0.041 0.012	0.448	0.000 0.418	0.000	0.00%
	31402	UID - Mansfield Place Newton Stewart	WasteWater	Quality	0.000	0.411	0.073	27/8/09	31/3/10	Dumfries and Galloway	0.484	0.000	0.000	0.012	0.038	0.434	0.000	0.00%
		UID - Maple Grove PS and New Housing Development UID - Marr Screening Chamber Troon	WasteWater WasteWater	Quality Quality	0.000	2.538 4.458	0.448 0.787	24/2/09 23/2/09		South Ayrshire South Ayrshire	2.970 5.229	0.016 0.016	0.099 0.174	0.190 0.334	1.978 3.474	0.703 1.247	0.000	0.00% 0.00%
	31405	UID - Marys Bridge	WasteWater	Quality	0.000	0.464	0.082	11/6/08	31/3/09	Clackmannanshire	0.546	0.000	0.017	0.055	0.474	0.000	0.000	0.00%
			WasteWater	Quality	0.000	0.440	0.078	11/6/13		Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Mavisbank Quay at Mavisbank Road UID - Mayfield Pumping Station 55 Mayfield Crescent Howwood	WasteWater	Quality	0.000	0.530	0.093	11/6/13		Glasgow City	0.623	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		Johnstone UID - Mckechnie Street off Govan Road	WasteWater WasteWater	Quality Quality	0.000	0.397 0.480	0.070 0.085	27/8/09 11/6/13		Renfrewshire Glasgow City	0.451 0.565	0.016 0.000	0.000	0.012 0.000	0.037 0.000	0.403 0.000	0.000	0.00%
24	J 14U9	UID - Mckechnie Street off Govan Road UID - Meadowhead Treatment Works - Inlet Works Emergency	vvasievvaler	Quanty	0.000	0.480	0.005	11/6/13	31/3/14	Gidayuw Olly	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
ς.*		Screen Chamber	WasteWater	Quality	0.000	18.022	3.180	1/12/08		North Ayrshire	21.187	0.016	0.424	0.424	7.421	12.918	0.000	0.00%
κ			WasteWater WasteWater	Quality Quality	0.000	17.999 0.884	3.176 0.156	1/12/08 27/4/08		North Ayrshire South Lanarkshire	21.159 1.040	0.016 0.000	0.423 0.033	0.423 0.105	7.411 0.902	12.901 0.000	0.000	0.00%
		UID - Middleton Drive CSO downstream of Craigendoran Avenue																
		Pumping Station Helensburgh UID - Mill Road adj to El Sub Station Airdrie	WasteWater WasteWater	Quality Quality	0.000 0.000	1.173 0.425	0.207 0.075	27/4/09 27/8/08		Argyll And Bute North Lanarkshire	1.380 0.484	0.000 0.016	0.004 0.012	0.047 0.040	0.135 0.432	1.195 0.000	0.000	0.00% 0.00%
	31415	UID - Millbrae Bridge on North Bank Millbrae Road	WasteWater	Quality	0.000	0.440	0.078	11/6/12	31/3/13	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
		UID - Millbrae Bridge on South Bank Millbrae Road UID - Millerpark Wellhall Road Bridge	WasteWater WasteWater	Quality Quality	0.000	0.490 1.307	0.086 0.231	11/6/12 27/4/09		Glasgow City South Lanarkshire	0.576 1.538	0.000	0.000 0.051	0.000 0.138	0.000 1.305	0.000 0.044	0.000	0.00% 0.00%
	31418	UID - Millholm Road Ejector Station		Quality	0.000	0.397	0.070	27/8/12		Glasgow City	0.467	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
R – I	Removed	from plan due to errors or duplication.																

R – Removed from plan due to errors or duplication.

* – Project 31410 is not removed in its entirety. Instead, the pre-efficiency costs for the work in the 2006-10 period are reduced from £21.2 milion to £5.3 million based on the Reporter's assessment of requirements.

		Gener	al Project Informat	tion							Fina	ncial Informatio	n of Chosen Sce	mario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
							_										
		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -	F		Total Q&SIII	Destruct	Project	Project	Project	Project	Capital	Capital
Business		project	Business			Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project	Desired Title	(primary	Project	Projects over £100k		Projects over	Construction	Project, Beneficial Use	Level Authority	(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100K	£100k	£100K	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Proiect - %
	UID - Milton New Septic Tank / Outfall Sewer	WasteWater	Quality	0.000			11/6/09		West Dunbartonshire	0.525	0.000	0.000	0.013	0.041	0.470	0.000	
	UID - Militon Rd West at Duddingston Rd West Edinburgh	WasteWater	Quality	0.000			23/2/09 11/6/12		City of Edinburgh	8.854 0.524	0.016	0.177 0.000	0.177 0.000	3.104 0.000		0.000	
	UID - Minigaff New Galloway Road Storm Overflow UID - Monkcastle Drive at Clydeford Road - Cambuslang	WasteWater WasteWater	Quality Quality	0.000			11/6/12		Dumfries and Galloway South Lanarkshire	0.628	0.000	0.000	0.000	0.000		0.000	
	B UID - Monteith Drive Pumping Station	WasteWater	Quality	0.000			27/8/12		East Renfrewshire	0.480	0.000	0.000	0.000	0.000		0.000	
	UID - Morriston Park - 61 Morriston Park Drive - Cambuslang	WasteWater	Quality	0.000	0.440	0.078	11/6/12		South Lanarkshire	0.517	0.000	0.000	0.000	0.000		0.000	
	UID - Morriston Street at Monkcastle Drive - Cambuslang	WasteWater	Quality	0.000			11/6/12		South Lanarkshire	0.517	0.000	0.000	0.000	0.000		0.000	
	6 UID - Mote Hill - Palace Grounds Road - Hamilton	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.124	0.000	0.037	0.101	0.954		0.000	
	7 UID - Near Camlachie Street B UID - Near Lightburn Road at rear of 108 Carntyne Road	WasteWater WasteWater	Quality Quality	0.000			23/2/09 23/2/09		Glasgow City Glasgow City	7.827 7.926	0.000	0.157 0.159	0.157 0.159	1.252 1.268	6.262 6.341	0.000	
	UID - Neilsland Road at Burnhouse Road	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.278	0.000	0.042	0.114			0.000	
	UID - Newton Stewart WWTW CSO	WasteWater	Quality	0.000			27/4/09		Dumfries and Galloway	1.876	0.000	0.005	0.063	0.184		0.000	
							_										
	UID - Newtonmore Storm Water Tank Overflow Golf Course Road		Quality	0.000			27/8/09		Highland Classow City	0.498	0.000	0.000	0.016	0.050		0.000	
	2 UID - Next to no. 42 Kirknewton Street (GN no 14) Springboig B UID - No.11 Furnace Court (behind); Hurlford	WasteWater WasteWater	Quality Quality	0.000			27/4/09 24/2/09		Glasgow City East Ayrshire	1.868 3.688	0.000 0.016	0.005 0.046	0.063 0.130	0.183 0.615	1.61 <i>7</i> 2.896	0.000	
	UID - No.6 Cheapside Street (behind); Kilmarnock	WasteWater	Quality	0.000			23/2/09		East Ayrshire	5.764	0.016	0.116	0.130	2.023		0.000	
	UID - NW of 99 Dowanfield Street	WasteWater	Quality	0.000	0.450	0.079	11/6/13	31/3/14	Glasgow City	0.530	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - o/s 209 Great Junction Street Edinburgh	WasteWater	Quality	0.000			25/4/13		City of Edinburgh	2.435	0.000	0.000	0.000	0.000		0.000	
	7 UID - o/s 31 Eyre Place Edinburgh	WasteWater	Quality	0.000			21/2/13		City of Edinburgh	8.849	0.000	0.000	0.000	0.000		0.000	
	UID - o/s 77 Shore Street Edinburgh UID - Off Path 72 Westwood Crescent	WasteWater WasteWater	Quality Quality	0.000			25/4/13 27/4/09		City of Edinburgh South Lanarkshire	2.291 2.029	0.000 0.000	0.000 0.067	0.000 0.182	0.000 1.722		0.000	
51433	J. J. J. J. J. J. J. J. J. J. J. J. J. J	2145101140101	Quanty	0.000	1.723	0.504	2114103	31/3/10		2.029	0.000	0.007	0.102	1.122	0.036	0.000	0.50 /0
	UID - Old Castle Road East of "New Bridge" near Homlea Road	WasteWater	Quality	0.000			11/6/12		Glasgow City	0.565	0.000	0.000	0.000	0.000		0.000	
	UID - Old Castle Road South of Manse Brae	WasteWater	Quality	0.000			11/6/12		Glasgow City	0.530	0.000	0.000	0.000	0.000		0.000	
	UID - OLD MILL LANE S/O RIVER	WasteWater	Quality	0.000			24/2/09		City of Edinburgh	2.718	0.016	0.090	0.174	1.811	0.642	0.000	
	UID - Opp 22 Lomond Drive Airdrie UID - Opposite 123 Castle Street Bridge	WasteWater WasteWater	Quality Quality	0.000			11/6/08 27/4/09		North Lanarkshire South Lanarkshire	0.943 1.507	0.016 0.000	0.030 0.050	0.097 0.135	0.816 1.279		0.000	
	UID - Opposite 21 Brandon Terrace Edinburgh	WasteWater	Quality	0.000			11/6/13		City of Edinburgh	0.660	0.000	0.000	0.000	0.000		0.000	
	UID - Opposite 24 Magdala Crescent Edinburgh	WasteWater	Quality	0.000			24/2/13		City of Edinburgh	3.611	0.000	0.000	0.000	0.000		0.000	
	7 UID - Opposite 24 Thrashbush Road CSO No1	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.971	0.016	0.005	0.067	0.195		0.000	
	UID - Opposite 24 Thrushbush Road CSO No2 UID - Opposite 34 Station Road	WasteWater WasteWater	Quality Quality	0.000			24/2/09 27/4/09		North Lanarkshire South Lanarkshire	2.961 1.137	0.016 0.016	0.037 0.003	0.105 0.039	0.495 0.113		0.000	
31443	UID - Opposite Sat Station Road UID - Opposite Bank from 14 Belford Place (Cauldrons Weir 2)	vvastevvater	Quality	0.000	0.500	0.173	2114109	3 1/3/10	South Landikshile	1.137	0.016	0.003	0.035	0.113	0.362	0.000	0.00%
31450	D Edinburgh	WasteWater	Quality	0.000	0.490	0.086	11/6/13	31/3/14	City of Edinburgh	0.576	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31451	1 UID - Opposite Beech Place CSO Penicuik	WasteWater	Quality	0.000	1.039	0.183	27/4/09		Midlothian	1.207	0.016	0.003	0.041	0.120	1.043	0.000	0.00%
04456					44.004		4440400			40.050	2 2 4 2			4 070	0.407		
31452	UID - Opposite former Zenith Works Stobcross Street Coatbridge UID - Opposite Martins of Dundyvan Ltd Dundyvan Road	vvastevvater	Quality	0.000	11.361	2.005	1/12/08	31/3/10	North Lanarkshire	13.350	0.016	0.267	0.267	4.678	8.137	0.000	0.00%
31453	Coatbridge	WasteWater	Quality	0.000	0.464	0.082	11/6/08	31/3/09	North Lanarkshire	0.530	0.016	0.017	0.055	0.458	0.000	0.000	0.00%
	UID - Opposite No 102 Duke Street Glasgow	WasteWater	Quality	0.000			11/6/09		Glasgow City	0.615	0.000	0.000	0.019	0.062	0.534	0.000	
	UID - Opposite No 93 Braidholm Road	WasteWater	Quality	0.000			27/4/09		East Renfrewshire	1.919	0.000	0.005	0.065	0.188		0.000	
31456	G UID - Opposite No. 4 Fairholm Street (GN no 6)	WasteWater	Quality	0.000	1.101	0.194	25/4/13	31/3/14	Glasgow City	1.296	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
R 31/157	UID - Outfall No 4 - Pumphouse No 3 Opp Suffolk Street Helensburgh	WasteWater	Quality	0.000	0.631	0.111	11/6/09	31/3/10	Argyll And Bute	0.742	0.000	0.000	0.023	0.075	0.644	0.000	0.00%
	UID - Outside 250 Mosspark Drive	WasteWater	Quality	0.000			27/8/12		Glasgow City	0.500	0.000	0.000	0.000	0.000		0.000	
31459	UID - Outside No 205 Finnieston Street	WasteWater	Quality	0.000	0.580	0.102	11/6/13	31/3/14	Glasgow City	0.682	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Outside No 279 Shettleston Road (GN no1)	WasteWater	Quality	0.000			11/6/09		Glasgow City	0.625	0.000		0.020	0.063		0.000	
31461	UID - Outside No. 2 Orr Street Glasgow Green (GN no 17)	WasteWater	Quality	0.000	0.480	0.085	11/6/13	31/3/14	Glasgow City	0.565	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31462	UID - Outside No.11 Olympia Street Glasgow Green (GN no 18)	WasteWater	Quality	0.000	0.480	0.085	11/6/13	31/3/14	Glasgow City	0.565	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Overflow adjacent to No 1A Moray Drive	WasteWater	Quality	0.000			27/8/12		East Renfrewshire	0.500	0.000	0.000	0.000	0.000		0.000	
31464	UID - Pacific Drive? Pacific Quay PS	WasteWater	Quality	0.000	0.408	0.072	27/8/13	31/3/14	Glasgow City	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31465	UID - Paisley Road At Junction With West Street (No.2)	WasteWater	Quality	0.000	0.464	0.082	11/6/13	31/3/14	Glasgow City	0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31466	UID - Pan Rocks Emergency Overflow North Shore Road @ Barassie Street Troon (140m beyond MLWM)	WasteWater	Quality	0.000	12.684	2.238	1/12/08	31/3/10	South Ayrshire	14.907	0.016	0.298	0.298	5.223	9.087	0.000	0.00%
	7 UID - Parklea PS 26 Garden Square Walk Airdrie	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.738	0.016	0.005	0.059	0.172		0.000	
	B UID - Partick PS CSO	WasteWater	Quality	0.000			29/11/12		Glasgow City	20.666	0.000	0.000	0.000	0.000		0.000	
	UID - Perth Road Cowdenbeath	WasteWater	Quality	0.000			11/6/09			0.546	0.000	0.000	0.017	0.055		0.000	
	UID - Pitcruvie Park Lundin Links	WasteWater	Quality	0.000			27/8/09			0.461	0.000	0.000	0.011	0.036		0.000	
	UID - Pollokshaws Road @ Pollok Avenue UID - Pomathorn Road Penicuik	WasteWater WasteWater	Quality Quality	0.000			11/6/12 27/8/09		Glasgow City Midlothian	0.546 0.427	0.000 0.016	0.000	0.000 0.011	0.000 0.035		0.000	
	UID - Poolewe Riverside PS 3	WasteWater	Quality	0.000			25/4/13		Highland	2.432	0.000	0.000	0.000	0.000		0.000	
	UID - Poolewe Village Hall PS 4	WasteWater	Quality	0.000			24/2/13		Highland	2.518	0.000	0.000	0.000	0.000		0.000	
31475	UID - Potter Place (at No9) Rattray Street	WasteWater	Quality	0.000	4.932	0.870	21/2/13	31/3/14	Glasgow City	5.802	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Promenade off Seafield Road East Edinburgh	WasteWater	Quality	0.000			1/12/08		City of Edinburgh	11.105	0.016	0.222	0.222	3.892		0.000	
	7 UID - Prospecthill Road at Asda Store Entrance B UID - PS (Beechcroft) Behind no.4 Rhindmuir Place	WasteWater WasteWater	Quality Quality	0.000			1/12/08 11/6/13		Glasgow City Glasgow City	10.412 0.960	0.000	0.208 0.000	0.208 0.000	1.666 0.000		0.000	
	UID - PS (Beechcroft) Benind no.4 Knindmuir Place UID - PS SWO Main SPS CSO & EO (Terminal PS)	WasteWater	Quality	0.000			24/2/13		Highland	2.775	0.000	0.000	0.000	0.000		0.000	
	UID - Pumping Station adj to 68 Moray Gardens	WasteWater	Quality	0.000			27/8/12		East Renfrewshire	0.467	0.000	0.000	0.000	0.000		0.000	
31481	UID - Pumping Station Kinloch Park	WasteWater	Quality	0.000	0.385	0.068	27/8/09	31/3/10	Argyll And Bute	0.453	0.000	0.000	0.011	0.036	0.406	0.000	0.00%
	2 UID - Quay Road at Eastfield PS Shieldhall No 42	WasteWater	Quality	0.000			24/2/13		South Lanarkshire	2.603	0.000	0.000	0.000			0.000	
	UID - Queen Mary Street UID - Rathlin Street off Govan Road in Ship Yards	WasteWater WasteWater	Quality Quality	0.000			11/6/13 11/6/13		Glasgow City Glasgow City	0.669 0.565	0.000		0.000				
3 1404	Transport of Covariation of Strain	**************************************	wuunty	0.000	0.400	0.000	11/0/13	3 1/3/14	Gladyon Olly	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0076

R – Removed from plan due to errors or duplication.

		Gener	al Project Informat	ion							Fina	ncial Informatio	n of Chosen Sce	nario		Capital Ma	intenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or					Forecast /									Deposition of	Deposition of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Proportion of Capital	Proportion of Capital
		project			Proportion of		Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	· ·																
31485	UID - Rear 3 Auchingramont Road	WasteWater	Quality	0.000	1.457	0.257	27/4/09	31/3/10	South Lanarkshire	1.714	0.000	0.057	0.153	1.455	0.049	0.000	0.00%
	UID - Rear 75 Dean Street Kilmarnock	WasteWater	Quality	0.000			27/4/09		East Ayrshire	2.288	0.016	0.006	0.078	0.226	1.978	0.000	0.00%
	UID - Rear of 1 Cecil Street Cecil Street Park Coatbridge	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	2.164	0.016	0.006	0.073	0.214	1.871	0.000	0.00%
	UID - Rear of 106 Cartside Street (in Albert Park)	WasteWater	Quality	0.000			11/6/12		Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Rear of 149 Kilbirnie Street Pollokshields UID - Rear of 17 Milton Terrace	WasteWater WasteWater	Quality Quality	0.000			11/6/13 11/6/08		Glasgow City South Lanarkshire	0.669 0.745	0.000	0.000 0.024	0.000 0.075	0.000 0.646	0.000	0.000	0.00%
	UID - Rear of 2 Strathmore Road	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.710	0.000	0.057	0.153	1.451	0.049	0.000	0.00%
	UID - Rear of 23 Burnside View Kirkwood Coatbridge	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.626	0.016	0.054	0.147	1.394	0.031	0.000	0.00%
31493	UID - Rear of 28 Glenluggie Road Kirkintilloch	WasteWater	Quality	0.000	1.315	0.232	27/4/09	31/3/10	East Dunbartonshire	1.547	0.000	0.004	0.052	0.152	1.339	0.000	0.00%
21404	UID - Rear of 36-48 Freeland Place 43 Willowbank Gardens Kirkintilloch	\Mosts\Motex	Quality	0.000	0.431	0.076	11/6/09	24/2/40	East Dunbartonshire	0.507	0.000	0.000	0.013	0.040	0.455	0.000	0.00%
	UID - Rear of 40 Arthur Place Cowdenbeath	WasteWater WasteWater	Quality Quality	0.000			11/6/09	31/3/10		0.530	0.000	0.000	0.013	0.053	0.460	0.000	0.00%
	UID - Rear of 40 Chriss Avenue	WasteWater	Quality	0.000			27/4/09		South Lanarkshire	1.110	0.000	0.037	0.099	0.942	0.032	0.000	0.00%
	UID - Rear of 44 Meadows Avenue Larkhall	WasteWater	Quality	0.000			24/2/09		South Lanarkshire	3.523	0.016	0.044	0.125	0.588	2.767	0.000	0.00%
	UID - Rear of 47 - 51 Church Street	WasteWater	Quality	0.000			27/8/08		South Lanarkshire	0.500	0.000	0.012	0.040	0.448	0.000	0.000	0.00%
	UID - Rear of 52 Woodfoot Road UID - Rear of 75a Meikle Earnock Road	WasteWater WasteWater	Quality Quality	0.000			11/6/08 11/6/08		South Lanarkshire South Lanarkshire	0.934 0.880	0.000	0.029 0.028	0.094 0.089	0.810 0.764	0.000	0.000	0.00%
	UID - Rear of 77 Nethercliffe Avenue	WasteWater	Quality	0.000			11/6/12		East Renfrewshire	0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31502	UID - Rear of 8 Backmuir Crescent Backmuir Road?	WasteWater	Quality	0.000	0.982	0.173	27/4/09	31/3/10	South Lanarkshire	1.155	0.000	0.038	0.103	0.981	0.033	0.000	0.00%
	UID - Rear of 81 The Vennel Linlithgow	WasteWater	Quality	0.000			11/6/09		West Lothian	0.534	0.000	0.000	0.017	0.054	0.464	0.000	0.00%
	UID - Rear of Beech Place CSO (1 Beech Place) Penicuik UID - Rear of No 35 Merryburn Avenue	WasteWater WasteWater	Quality Quality	0.000			27/8/09 27/4/09		Midlothian East Renfrewshire	0.464 1.947	0.016 0.000	0.000 0.005	0.012 0.066	0.038 0.191	0.414 1.685	0.000 0.000	0.00% 0.00%
	UID - Rear of No 88 Moray Gardens (Overlee Park)	WasteWater	Quality	0.000			27/8/12		East Renfrewshire	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Rear Of Offices Coustonholm Road	WasteWater	Quality	0.000			27/8/12		Glasgow City	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Regent Gardens 2 The Regent Centre Cowgate Kirkintilloch		Quality	0.000			27/8/09		East Dunbartonshire	0.428 0.517	0.000	0.000	0.011	0.034	0.383	0.000	0.00%
31505	UID - Renfrew Road Through Scrap Yard (Shieldhall) UID - Riverside Court Pumping Station (Eastwood P.S.) Riverside	WasteWater	Quality	0.000	0.440	0.078	11/6/13	31/3/14	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31510	Place Netherlee	WasteWater	Quality	0.000	0.397	0.070	27/8/12	31/3/13	East Renfrewshire	0.467	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Roseburn Cliff Edinburgh	WasteWater	Quality	0.000			24/2/13		City of Edinburgh	2.830	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
0.45.46	UID - Rowallan Tanks;opp 136 Glasgow Road behind Rowallen					2.42	0.4 10 10 0							0.470			
	Creamery Kilmarnock UID - Rutherglen Rd/Polmadie Rd (No. 1)	WasteWater WasteWater	Quality Quality	0.000			24/2/09 11/6/09		East Ayrshire Glasgow City	2.832 0.576	0.016 0.000	0.035 0.000	0.100 0.018	0.473 0.058	2.223 0.500	0.000	0.00%
	UID - Rutherglen Rd/Polmadie Rd (No. 2)	WasteWater	Quality	0.000			11/6/13		Glasgow City	0.660	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31515	UID - Rutherglen Road at Fauldhouse St (Richmond Park)	WasteWater	Quality	0.000	0.530	0.093	11/6/13	31/3/14	Glasgow City	0.623	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Rutherglen Road in Park (Richmond Park)	WasteWater	Quality	0.000			1/12/08		Glasgow City	12.479	0.000	0.250	0.250	4.368	7.612	0.000	0.00%
	UID - Rutherglen Road Rear of No 473 UID - s/o Greenbank Church Comiston Rd Edinburgh	WasteWater	Quality	0.000			11/6/13		Glasgow City	0.619	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31310	UID - Sandylands Promenade Overflow Salcoats P.S No 2 Canal	WasteWater	Quality	0.000	4.292	0.757	23/2/09	31/3/10	City of Edinburgh	5.034	0.016	0.167	0.322	3.345	1.200	0.000	0.00%
31519	Place Saltcoats	WasteWater	Quality	0.000	10.550	1.862	1/12/08	31/3/10	North Ayrshire	12.396	0.016	0.248	0.248	4.344	7.556	0.000	0.00%
31520	UID - Saunders Street Edinburgh	WasteWater	Quality	0.000	0.526	0.093	11/6/13	31/3/14	City of Edinburgh	0.619	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
24504	UID - Scott Ellis Siphon where A77 crosses River Irvine South of	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Quality	0.000	0.467	0.425	24/2/00	24/2/40	Fact Asmehine	2 007	0.046	0.020	0.400	0.400	2 267	0.000	0.000
31521	Linfern Avenue East Kilmarnock UID - Scott Ellis Tanks New Mill Road South of Samson Avenue	WasteWater	Quality	0.000	2.467	0.435	24/2/09	31/3/10	East Ayrshire	2.887	0.016	0.036	0.102	0.482	2.267	0.000	0.00%
31522	Kilmarnock	WasteWater	Quality	0.000	4.484	0.791	23/2/09	31/3/10	East Ayrshire	5.259	0.016	0.065	0.186	0.876	4.132	0.000	0.00%
	UID - Seafield Road East Edinburgh	WasteWater	Quality	0.000			1/12/08		City of Edinburgh	12.111	0.016	0.243	0.243	4.244	7.381	0.000	0.00%
	UID - Seath Road at Railway Bridge Farme Estate Shieldhall No	NA// 18/ 1	0						0 41-1 1 1								
31524	UID - Shawbridge Street North of Bridge	WasteWater	Quality Quality	0.000			11/6/12 11/6/12		South Lanarkshire Glasgow City	0.565 0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Shawbridge Street North of Bridge	WasteWater WasteWater	Quality	0.000			11/6/12		Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Sheriff Brae CSO Edinburgh	WasteWater	Quality	0.000			25/4/13		City of Edinburgh	2.191	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Shields Road Motherwell	WasteWater	Quality	0.000	2.887	0.509	24/2/09	31/3/10	North Lanarkshire	3.396	0.000	0.042	0.120	0.564	2.670	0.000	0.00%
	UID - Shore Street at Broad Mand Edinburgh	WasteWater	Quality	0.000			25/4/13 25/4/13		City of Edinburgh	2.402 2.294	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Shore Street at Broad Wynd Edinburgh UID - Shore Street at Timber Bush Edinburgh	WasteWater WasteWater	Quality Quality	0.000			25/4/13 11/6/13		City of Edinburgh City of Edinburgh	0.624	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
2.301	UID - Site of Former STW 100m West of 52 Kennelburn Road			5.500	3.500	0.004	11,0/10	51,5/14		5.524	5.500	5.550	5.550		0.000	0.000	0.0070
	Chapelhall	WasteWater	Quality	0.000			27/4/09		North Lanarkshire	1.962	0.000	0.005	0.066	0.192	1.698	0.000	0.00%
	UID - SKELLYTON Storm Storage	WasteWater	Quality	0.000			4 4 10 10 0		South Lanarkshire	0.015	0.000	0.000	0.000	0.001	0.014	0.000	0.00%
	UID - Skellyton STW After Primary Tanks UID - Skellyton STW Inlet Works	WasteWater WasteWater	Quality Quality	0.000			11/6/09 23/2/09		South Lanarkshire South Lanarkshire	0.514 8.016	0.016 0.016	0.000 0.161	0.017 0.161	0.053 1.285	0.444 6.410	0.000 0.000	0.00% 0.00%
	UID - Skellyton STW Inlet Works (6xDWF)	WasteWater	Quality	0.000			11/6/09		South Lanarkshire	0.514	0.016		0.017	0.053	0.444		0.00%
31537	UID - Skellyton STW Inlet Works (9 DWF)	WasteWater	Quality	0.000	7.380	1.302	23/2/09	31/3/10	South Lanarkshire	8.666	0.016	0.174	0.174	3.039	5.280	0.000	0.00%
31538	UID - Smithycroff PS - Hamilton	WasteWater	Quality	0.000	1.271	0.224	27/4/09	31/3/10	South Lanarkshire	1.495	0.000	0.049	0.134	1.269	0.043	0.000	0.00%
24520	UID - South of Clydeside Expressway roundabout Ferry Road (GN no 40)	l WasteWater	Quality	0.000	0.523	0.092	11/6/13	24/2/44	Glasgow City	0.615	0.000	0.000	0.000	0.000	0.000	0.000	0.000/
31035	UID - South of Jct. Burniebrae / Whinhall Road in parkland across		Quality	0.000	0.523	0.092	11/0/13	31/3/14	Ciasgow City	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31540	from 22/24 Burniebrae	WasteWater	Quality	0.000	3.058	0.540	24/2/09	31/3/10	North Lanarkshire	3.582	0.016	0.045	0.126	0.598	2.813	0.000	0.00%
31541	UID - South Street WWPS Elie	WasteWater	Quality	0.000	1.463	0.258	27/4/09	31/3/10	Fife	1.722	0.000	0.004	0.058	0.169	1.490	0.000	0.00%
31542	UID - Southhook P.S. Southhook Road Kilmarnock	WasteWater	Quality	0.000	1.816	0.321	27/4/09	31/3/10	East Ayrshire	2.121	0.016	0.005	0.072	0.210	1.834	0.000	0.00%
315/13	UID - Springfield Quay (No. 1) Seaward Street R/O Cinema Kingston	WasteWater	Quality	0.000	0.464	0.082	11/6/13	31/3/1/	Glasgow City	0.546	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Springfield Quay via Paisley Road	WasteWater	Quality	0.000			24/2/13		Glasgow City	2.548	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31545	UID - Springhill Road Roundabout	WasteWater	Quality	0.000	0.425	0.075	27/8/13	31/3/14	Glasgow City	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - St Andrews Lane	WasteWater	Quality	0.000	0.526		11/6/09		Glasgow City	0.619	0.000	0.000	0.020	0.062	0.537	0.000	0.00%
	UID - St Marks Park Edinburgh	WasteWater	Quality	0.000			11/6/13		City of Edinburgh	0.624	0.000		0.000	0.000	0.000	0.000	0.00%
	d from plan due to errors or duplication.	WasteWater	Quality	0.000	2.517	0.444	24/2/09	3 1/3/10	East Ayrshire	2.945	0.016	0.037	0.104	0.492	2.313	0.000	0.00%

R – Removed from plan due to errors or duplication.

		Const	d Broket Informa	lla a							Floor	a clai Informatio	n of Chosen Sce	anda		Capital Ma	Internace
1	2	3	al Project Informa	6	7	8	12	13	14	16	17	18	n of Chosen Sce 19	20	21	30	31
	•											- 10	- 1		-		
		Water or					Forecast /									Proportion of	
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -	Forecast / Actual -		Total Q&SIII	Desired	Project	Project	Project	Project	Capital	Capital
Project		project (primary	Project		Proportion of Projects over		Project, Construction	Project, Beneficial Use		Project Cost (2006 - 2014	Project Expenditure	Expenditure Profile	Expenditure Profile	Expenditure Profile	Expenditure Profile	Maintenance Element of	Maintenance Element of
Autocode	Project Title	purpose)	Classification 1		£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
31549	UID - Stag Street at Highland Lane	WasteWater	Quality	0.000	0.559	0.099	11/6/13	31/3/14	Glasgow City	0.658	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31550	UID - Standford Hall Allison Drive - Cambuslang	WasteWater	Quality	0.000	0.532	0.094	11/6/12	31/3/13	South Lanarkshire	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Stevenston WWTP PFI F.F.T CSO UID - Storm Sewage Overflow (GN no 5) Culross Lane	WasteWater WasteWater	Quality Quality	0.000		1.290 0.191	23/2/09 25/4/13		North Ayrshire Glasgow City	8.586 1.273	0.016 0.000	0.172 0.000	0.172 0.000	3.010 0.000	5.231 0.000		
31332	OID - Storin Sewage Overnow (Giv no 3) Culloss Lane	vvastevvater	Quality	0.000	1.082	0.191	23/4/13	31/3/14	Glasgow City	1.273	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Storm Sewage Overflow 18 Hamilton Road Cambuslang	WasteWater	Quality	0.000		0.288	27/4/09		South Lanarkshire	1.920	0.000	0.005	0.065	0.188	1.662		
	UID - Storm Sewage Overflow East Station Industrial Estate UID - Storm Sewage Overflow Halfway	WasteWater WasteWater	Quality	0.000		0.311 0.306	27/4/09 27/4/09		South Lanarkshire South Lanarkshire	2.058 2.041	0.016 0.000	0.005 0.005	0.070 0.069	0.203 0.200	1.780 1.766		
	UID - Stormwater Sewage	WasteWater	Quality Quality	0.000		0.453	24/2/09		East Dunbartonshire	3.022	0.000	0.003	0.106	0.502	2.377		
	UID - Stranraer 12 McMasters Road Storm Overflow	WasteWater	Quality	0.000		0.477	24/2/13		Dumfries and Galloway	3.183	0.000	0.000	0.000	0.000	0.000		
	UID - Stranraer 12A Hanover Square Storm Overflow UID - Stranraer 21 Larg Road No.1 Storm Overflow	WasteWater WasteWater	Quality Quality	0.000		0.326 0.078	25/4/13 11/6/12		Dumfries and Galloway Dumfries and Galloway	2.174 0.521	0.000	0.000	0.000	0.000	0.000		
01003	UID - Stranraer Beechmount - Cairnryan Road at Bowling Green	VVUSICVVUICI	Quality	0.000	0.440	0.070	1170712	01/0/10	Dannies and Calloway	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.0070
31560	Road Storm Overflow	WasteWater	Quality	0.000	0.454	0.080	11/6/12	31/3/13	Dumfries and Galloway	0.534	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31561	UID - Stranraer Chevron Lochview Road Bishopburn Storm Overflow	WasteWater	Quality	0.000	2.370	0.418	24/2/13	31/3/14	Dumfries and Galloway	2.788	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Stranraer Dalrymple Street at Dunbar Court Stranraer	WasteWater	Quality	0.000	2.420	0.427	24/2/13		Dumfries and Galloway	2.847	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Stranraer Port Rodie Pumping Station Works Stranraer	WasteWater	Quality	0.000		0.800	21/2/13		Dumfries and Galloway	5.332	0.000	0.000	0.000	0.000	0.000		
	UID - Stranraer; 2 Fairhurst Road Storm Overflow UID - Submarine Rockcliffe PS opposite Tar Lillyan	WasteWater WasteWater	Quality Quality	0.000		0.071 0.514	27/8/12 24/2/13		Dumfries and Galloway Dumfries and Galloway	0.471 3.425	0.000	0.000	0.000	0.000 0.000	0.000		
R 31566	UID - Suffolk Street Pumping Station Helensburgh	WasteWater	Quality	0.000	0.709	0.125	11/6/09	31/3/10	Argyll And Bute	0.834	0.000	0.000	0.026	0.084	0.724	0.000	0.00%
	UID - Sutherland Street Helensburgh	WasteWater	Quality	0.000		0.072	27/8/09		Argyll And Bute	0.483		0.000	0.012	0.038	0.433		
	UID - Temple WWPS Lower Largo UID - The Pavillion - Long Outfall	WasteWater WasteWater	Quality Quality	0.000		0.290 1.556	27/4/09 1/12/08	31/3/10 31/3/10	North Ayrshire	1.937 10.357	0.000 0.016	0.005 0.207	0.065 0.207	0.190 3.630	1.676 6.311		
R 31570	UID - The Pavillion - Short Outfall	WasteWater	Quality	0.000	8.817	1.556	1/12/08	31/3/10	North Ayrshire	10.357	0.016	0.207	0.207	3.630	6.311	0.000	0.00%
31571	UID - Tollcross Park (at Tollcross Road)	WasteWater	Quality	0.000	0.495	0.087	11/6/13	31/3/14	Glasgow City	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31572	UID - Tollcross Park at footbridge North of (GN no 7) Leisure Centre	WasteWater	Quality	0.000	0.440	0.078	11/6/13	31/3/14	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
31573	UID - Tollcross Park west of No 785 Tollcross Road (GN no 8)	WasteWater	Quality	0.000	0.440	0.078	11/6/13	31/3/14	Glasgow City	0.517	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Tollcross Road (South of)	WasteWater	Quality	0.000		0.085 0.144	11/6/13 11/6/13		Glasgow City	0.565 0.961	0.000	0.000	0.000	0.000	0.000		
	UID - Tower Street at Malmaison Hotel Edinburgh UID - Tower Street Edinburgh	WasteWater WasteWater	Quality Quality	0.000		0.144	11/6/13		City of Edinburgh City of Edinburgh	0.619	0.000	0.000	0.000	0.000	0.000		
31577	UID - Upper Muir Street	WasteWater	Quality	0.000	0.853	0.150	27/4/08	31/3/09	South Lanarkshire	1.003	0.000	0.032	0.101	0.870	0.000	0.000	0.00%
	UID - Upper Muir Street - Back Row - Hamilton UID - Valleyfield Road CSO No1 Penicuik	WasteWater WasteWater	Quality Quality	0.000		0.178 0.072	27/4/09 27/8/09		South Lanarkshire Midlothian	1.183 0.464	0.000 0.016	0.039	0.106 0.012	1.004 0.038	0.034 0.414		
	UID - Valleyfield Storm Works	WasteWater	Quality	0.000		0.072	27/8/09		Midlothian	0.464	0.016	0.000	0.012	0.038	0.414		
	UID - VENTNOR PLACE/NEWINGTON CEMETRY	WasteWater	Quality	0.000	4.482	0.791	23/2/09		City of Edinburgh	5.258	0.016	0.175	0.336	3.493	1.254	0.000	0.00%
	UID - Warriston Recreation Ground Edinburgh UID - Water Row off Govan Road	WasteWater WasteWater	Quality Quality	0.000		0.092 0.094	11/6/13 11/6/13		City of Edinburgh Glasgow City	0.615 0.625	0.000	0.000	0.000	0.000	0.000		
	UID - Wellshot Road at Fairburn Street	WasteWater	Quality	0.000		1.320	21/2/13		Glasgow City	8.801	0.000	0.000	0.000	0.000	0.000		
31585	UID - West end Public Park CSO Drumpellier	WasteWater	Quality	0.000	2.510	0.443	24/2/09	31/3/10	North Lanarkshire	2.938	0.016	0.037	0.104	0.491	2.306	0.000	0.00%
	UID - West of Dundyvan Road Langloan Park Coatbridge UID - West of Greenholm Street at footbridge Kilmarnock	WasteWater WasteWater	Quality Quality	0.000		0.141 0.857	11/6/08 23/2/09		North Lanarkshire East Ayrshire	0.927 5.695	0.016 0.016	0.030 0.114	0.095 0.114	0.802 1.999	0.000 3.468		
	UID - West of No. 149 Baillieston Road (GN no 4)	WasteWater	Quality	0.000		0.269	25/4/13		Glasgow City	1.791	0.000	0.000	0.000	0.000	0.000		
	UID - Westburn PS - Clydeford Road - Cambuslang	WasteWater	Quality	0.000		0.072	27/8/12		South Lanarkshire	0.480	0.000	0.000	0.000	0.000	0.000		
	UID - Williamfield Storm Overflow UID - Williamwood Storm Tank First Avenue	WasteWater WasteWater	Quality Quality	0.000		0.876 0.075	23/2/09 27/8/12		North Ayrshire East Renfrewshire	5.823 0.500	0.016 0.000	0.117 0.000	0.117 0.000	2.044 0.000	3.546 0.000		
31592	UID - Williamwood Storm Tank Netherburn Avenue	WasteWater	Quality	0.000	0.491	0.087	11/6/12	31/3/13	East Renfrewshire	0.577	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	UID - Williamwood Storm Tank No1 UID - Williamwood Storm Tank No2	WasteWater	Quality	0.000		0.082	11/6/12		East Renfrewshire	0.546	0.000	0.000	0.000	0.000	0.000		
	Ullapool WTW - Upgrade	WasteWater Water	Quality Quality	0.000		0.082 0.756	11/6/12 10/4/08		East Renfrewshire Highland	0.546 0.772	0.000 0.000	0.000 0.045	0.000 0.258	0.000 0.468	0.000		
31596	UNDERWOOD (CUMNOCK) STW Upgrade	WasteWater	Quality	0.000	0.000	0.971	11/3/12	31/3/13	East Ayrshire	0.971	0.000	0.000	0.000	0.000	0.000	0.000	0.00%
	Unst WTW - Upgrade UPLAWMOOR STW Upgrade	Water WasteWater	Quality Quality	0.000		0.279 1.076	29/7/07 24/12/12		Shetland Islands East Renfrewshire	0.270 1.076	0.015 0.000	0.041 0.000	0.229 0.000	0.000	0.000		
31599	VOE ST Upgrade	WasteWater	Quality	0.000		1.766	25/12/07		Shetland Islands	1.766	0.000	0.000	0.511	1.163	0.000		
31600	Wanton Walls WTW - Upgrade	Water	Quality	0.007		2.761	25/12/07		Scottish Borders	2.817		0.165		1.778	0.000		
	Water Infrastructure Capital Maintenance - Capitalised Mains Repairs - SWW	Water	Base	65.719	0.000	0.000			Scottish Water Wide	65.719	0.000	8.215	8.215	8.215	8.215	65.719	100.00%
	Water Infrastructure Capital Maintenance - Critical Valve																
31602	Replacement - SWW Water Infrastructure Capital Maintenance - Distribution Meters:	Water	Base	10.453	0.000	0.000			Scottish Water Wide	10.453	0.000	1.045	1.045	1.045	1.045	10.453	100.00%
31603	dma - SWW	Water	Base	5.917	0.000	0.000			Scottish Water Wide	5.917	0.000	0.740	0.740	0.740	0.740	5.917	100.00%
	Water Infrastructure Capital Maintenance - Distribution Meters:																
	wsz - SWW Water Infrastructure Capital Maintenance - DMA Establishment -	Water	Base	1.902	0.000	0.000			Scottish Water Wide	1.902	0.000	0.238	0.238	0.238	0.238	1.902	100.00%
31605	SWW	Water	Base	17.334	0.000	0.000			Scottish Water Wide	15.769	1.565	7.884	7.884	0.000	0.000	17.334	100.00%
0.100	Water Infrastructure Capital Maintenance - DOMS Network	\Mate:	Bass	44.05					Coottiele 184-4 1871				4.00	4.0=		44.00	100 000
31606	Investigations - SWW	Water	Base	11.274	0.000	0.000			Scottish Water Wide	10.481	0.792	1.871	1.871	1.871	1.871	11.274	100.00%
31607	Water Infrastructure Capital Maintenance - Flow Loggers - SWW	Water	Base	3.487	0.000	0.000			Scottish Water Wide	3.487	0.000	0.436	0.436	0.436	0.436	3.487	100.00%
24000	Motor Infrastructure Contint Maintenance Income to A	\Mate-	Bass	44.005	0.000	0.000			Coeffich Meter 1851-1-	40.071	0.054	2.450	2.452	0.450	2.000	44 00-	400.000
	Water Infrastructure Capital Maintenance - Invercannie Aqueduct Water Infrastructure Capital Maintenance - Low Pressure	vvater	Base	11.325	0.000	0.000			Scottish Water Wide	10.374	0.951	3.458	3.458	3.458	0.000	11.325	100.00%
	Maintenance - SWW	Water	Base	6.276	0.000	0.000			Scottish Water Wide	6.276	0.000	0.628	0.628	0.628	0.628	6.276	100.00%
24640	Water Infrastructure Capital Maintenance - Network Optimisation	Mater	Paca	0.004	0.000	0.000			Coattich Mater Mid-	0.001	0.000	0.040	0.040	0.040	0.040	0.004	100 000
31610	Study - SWW	Water	Base	0.991	0.000	0.000			Scottish Water Wide	0.991	0.000	0.248	0.248	0.248	0.248	0.991	100.00%
		Water	Base	1.162		0.000			Scottish Water Wide	1.162	0.000	0.145	0.145	0.145	0.145		
31612	Water Infrastructure Capital Maintenance - PRV - SWW	Water	Base	0.634	0.000	0.000			Scottish Water Wide	0.634	0.000	0.079	0.079	0.079	0.079	0.634	100.00%
31613	Water Infrastructure Capital Maintenance - PRV Optimisation Study - SWW	Water	Base	2.949	0.000	0.000			Scottish Water Wide	2.949	0.000	0.737	0.737	0.737	0.737	2.949	100.00%
	from plan due to errors or duplication.		•			2.550					2.220	221	551	557	231	2.5.5	

		Genera	I Project Informat	ion							Fina	ncial Information	n of Chosen Sce	nario		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or					Forecast /									Proportion of	Departies of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Proportion of Capital
		project		Proportion of	Proportion of	Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project	Decinal Title	(primary	Project Classification 1			Projects over		Project, Beneficial Use	Least Authority	(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Proiect - £m	Proiect - %
3161/	Water Infrastructure Capital Maintenance - PRV RTU - SWW	Water	Base	1.268	0.000	0.000			Scottish Water Wide	1.268	0.000	0.158	0.158	0.158	0.158	1.268	100.00%
31014	Water Infrastructure Capital Maintenance - PRO TOTO - SWW	VValei	Dase						Scottisti vvater vvide	1.200	0.000	0.130	0.130	0.130	0.130	1.200	100.00%
31615	Communication Pipes Renewal - SWW Water Infrastructure Capital Maintenance - Reactive Trunk Mains	Water	Base	8.662	0.000	0.000			Scottish Water Wide	8.662	0.000	1.083	1.083	1.083	1.083	8.662	100.00%
31616	SWW	Water	Base	0.000	11.332	0.000			Scottish Water Wide	11.332	0.000	1.416	1.416	1.416	1.416	11.332	100.00%
24647	Water Infrastructure Capital Maintenance - Risk Based Storage	Mater	Bass	0.416	0.000	0.000			Conttinh Mater Mide	0.446	0.000	0.404	0.404	0.404	0.404	0.446	100.00%
31617	Study - SWW Water Infrastructure Capital Maintenance - Trunk Main	Water	Base	0.416	0.000	0.000			Scottish Water Wide	0.416	0.000	0.104	0.104	0.104	0.104	0.416	100.00%
31618	Investigations - SWW	Water	Base	6.932	0.000	0.000			Scottish Water Wide	6.932	0.000	1.213	1.213	1.213	1.213	6.932	100.00%
31619	Water Infrastructure Capital Maintenance - Unplanned Interruptions - Rehab - SWW	Water	Base	83.989	0.000	0.000			Scottish Water Wide	83.989	0.000	10.499	10.499	10.499	10.499	83.989	100.00%
	Water Infrastructure Capital Maintenance - Unplanned																
	Interruptions - Relay - SWW Water Mains - rehab - Q&S3b - SWW	Water Water	Base Base	83.989 74.068	0.000				Scottish Water Wide Scottish Water Wide	83.989 74.068	0.000 0.000	10.499 0.000	10.499 0.000	10.499 0.000	10.499 0.000		
31622	Water Mains Rehab - Aberchirder Cleanhill WSZ	Water	Base	0.303	0.000	0.000			Scottish Water Wide	0.303	0.000	0.076	0.076	0.076	0.076	0.303	100.00%
	Water Mains Rehab - AFTON DIRECT WSZ Water Mains Rehab - AMLAIRD WSZ	Water Water	Base Base	1.074 2.041					Scottish Water Wide Scottish Water Wide	1.074 2.041		0.269 0.510	0.269 0.510	0.269 0.510	0.269 0.510		
	Water Mains Rehab - Auchneel WSZ	Water	Base	1.320					Scottish Water Wide	1.320	0.000	0.330	0.330	0.330	0.330		
31626	Water Mains Rehab - Back WSZ	Water	Base	0.316	0.000	0.000			Scottish Water Wide	0.316		0.079	0.079	0.079	0.079	0.316	100.00%
	Water Mains Rehab - Badentinan CWT WSZ Water Mains Rehab - BALJAFFRAY WSZ	Water Water	Base Base	0.813 1.322					Scottish Water Wide Scottish Water Wide	0.813 1.322		0.203 0.331	0.203 0.331	0.203 0.331	0.203 0.331	0.813 1.322	
31629	Water Mains Rehab - Banff Gallowhill Gpn N WSZ	Water	Base	0.407	0.000	0.000			Scottish Water Wide	0.407	0.000	0.102	0.102	0.102	0.102	0.407	100.00%
	Water Mains Rehab - Banknock to Woodburn WSZ Water Mains Rehab - Barra WSZ	Water Water	Base Base	2.989 1.534					Scottish Water Wide Scottish Water Wide	2.989 1.534	0.000 0.000	0.747 0.384	0.747 0.384	0.747 0.384	0.747 0.384		
	Water Mains Rehab - BELMORE TANK WSZ	Water	Base	0.348					Scottish Water Wide	0.348	0.000	0.087	0.087	0.087	0.087		
	Water Mains Rehab - Benbecula WSZ Water Mains Rehab - Blackford WSZ	Water Water	Base Base	0.921 0.728					Scottish Water Wide Scottish Water Wide	0.921 0.728	0.000 0.000	0.230 0.182	0.230 0.182	0.230 0.182	0.230 0.182		
	Water Mains Rehab - Blackhall Davidsons Mains WSZ	Water	Base	0.728					Scottish Water Wide	0.728	0.000	0.162	0.182	0.162	0.182		
	Water Mains Rehab - BLNANS WTW OLD KP SR WSZ	Water	Base	0.316					Scottish Water Wide	0.316	0.000	0.079	0.079	0.079	0.079		
	Water Mains Rehab - Bluehill (IC & MF) WSZ Water Mains Rehab - Bogbain WSZ	Water Water	Base Base	0.306 0.277					Scottish Water Wide Scottish Water Wide	0.306 0.277		0.076 0.069	0.076 0.069	0.076 0.069	0.076 0.069		
31639	Water Mains Rehab - Bonar Bridge WTW WSZ	Water	Base	0.293	0.000	0.000			Scottish Water Wide	0.293	0.000	0.073	0.073	0.073	0.073	0.293	100.00%
	Water Mains Rehab - Brackans Turriff WSZ Water Mains Rehab - BRACKENHIRST WSZ	Water Water	Base Base	0.733 2.720					Scottish Water Wide Scottish Water Wide	0.733 2.720	0.000 0.000	0.183 0.680	0.183 0.680	0.183 0.680	0.183 0.680		
	Water Mains Rehab - Burgir Hill WSZ	Water	Base	0.609	0.000	0.000			Scottish Water Wide	0.609	0.000	0.152	0.152	0.152	0.152	0.609	100.00%
	Water Mains Rehab - BUSBIEMUIR WSZ	Water	Base	0.484 0.568					Scottish Water Wide	0.484 0.568	0.000 0.000	0.121	0.121	0.121 0.142	0.121		
	Water Mains Rehab - C1 THORNLIEBANK WSZ Water Mains Rehab - C2 CMADDIE CMILK PS WSZ	Water Water	Base Base	0.568	0.000				Scottish Water Wide Scottish Water Wide	0.568	0.000	0.142 0.192	0.142 0.192	0.142	0.142 0.192		
	Water Mains Rehab - C5 WOODHILL WATER TOWER WSZ	Water	Base	1.007	0.000	0.000			Scottish Water Wide	1.007	0.000	0.252	0.252	0.252	0.252	1.007	100.00%
	Water Mains Rehab - CAMPS WSZ Water Mains Rehab - Carberry Low WSZ	Water Water	Base Base	3.452 0.688	0.000				Scottish Water Wide Scottish Water Wide	3.452 0.688	0.000 0.000	0.863 0.172	0.863 0.172	0.863 0.172	0.863 0.172		
31649	Water Mains Rehab - Carloway 1 & 2 WSZ	Water	Base	0.583	0.000	0.000			Scottish Water Wide	0.583	0.000	0.146	0.146	0.146	0.146	0.583	100.00%
	Water Mains Rehab - Clatto WSZ Water Mains Rehab - CLYDEBANK DIRECT WSZ	Water Water	Base Base	2.278 0.384	0.000				Scottish Water Wide Scottish Water Wide	2.278 0.384	0.000 0.000	0.570 0.096	0.570 0.096	0.570 0.096	0.570 0.096		
	Water Mains Rehab - CowHill WSZ	Water	Base	0.499					Scottish Water Wide	0.499	0.000	0.125	0.125	0.125	0.125		
	Water Mains Rehab - CROSBIE WSZ	Water	Base	0.675					Scottish Water Wide	0.675		0.169 0.080	0.169	0.169	0.169		
	Water Mains Rehab - Crossqatehall WSZ Water Mains Rehab - DALMACOULTER WSZ	Water Water	Base Base	0.321 3.452					Scottish Water Wide Scottish Water Wide	0.321 3.452		0.863	0.080 0.863	0.080 0.863	0.080 0.863		
31656	Water Mains Rehab - DALRY WSZ	Water	Base	0.438	0.000	0.000			Scottish Water Wide	0.438	0.000	0.110	0.110	0.110	0.110	0.438	100.00%
	Water Mains Rehab - DARVEL WSZ Water Mains Rehab - DECHMONT WSZ	Water Water	Base Base	0.767 2.006					Scottish Water Wide Scottish Water Wide	0.767 2.006		0.192 0.502	0.192 0.502	0.192 0.502	0.192 0.502		
31659	Water Mains Rehab - Drumbuie (Nam Bat) WSZ	Water	Base	0.256	0.000	0.000			Scottish Water Wide	0.256	0.000	0.064	0.064	0.064	0.064	0.256	100.00%
	Water Mains Rehab - Dunnichen WSZ Water Mains Rehab - East Craigs WSZ	Water Water	Base Base	0.376 2.365					Scottish Water Wide Scottish Water Wide	0.376 2.365	0.000 0.000	0.094 0.591	0.094 0.591	0.094 0.591	0.094 0.591	0.376 2.365	
31662	Water Mains Rehab - Edderton lower WSZ	Water	Base	0.283	0.000	0.000			Scottish Water Wide	0.283	0.000	0.071	0.071	0.071	0.071	0.283	100.00%
	Water Mains Rehab - Elrig WSZ Water Mains Rehab - FAULDRIBBON WSZ	Water Water	Base Base	0.314 0.328					Scottish Water Wide Scottish Water Wide	0.314 0.328	0.000 0.000	0.079 0.082	0.079 0.082	0.079 0.082	0.079 0.082		
	Water Mains Rehab - FAOLDRIBBON WSZ Water Mains Rehab - Fernhill WSZ	Water	Base	2.072					Scottish Water Wide	2.072	0.000	0.082	0.082	0.082	0.082		
	Water Mains Rehab - FOXBAR HOLLOWHOUSE WSZ	Water	Base	1.918					Scottish Water Wide	1.918	0.000	0.480	0.480	0.480	0.480		
	Water Mains Rehab - Gairloch WSZ Water Mains Rehab - GARSHAKE WSZ	Water Water	Base Base	0.384 0.571					Scottish Water Wide Scottish Water Wide	0.384 0.571	0.000 0.000	0.096 0.143	0.096 0.143	0.096 0.143	0.096 0.143		
31669	Water Mains Rehab - Gateside WSZ	Water	Base	0.538	0.000	0.000			Scottish Water Wide	0.538	0.000	0.134	0.134	0.134	0.134	0.538	100.00%
	Water Mains Rehab - GBOIG BRACKENHIRST DMC WSZ Water Mains Rehab - Gilmerton Lower WSZ	Water Water	Base Base	0.301 0.340					Scottish Water Wide Scottish Water Wide	0.301 0.340	0.000 0.000	0.075 0.085	0.075 0.085	0.075 0.085	0.075 0.085		
31672	Water Mains Rehab - GLAISNOCK WSZ	Water	Base	1.151	0.000	0.000			Scottish Water Wide	1.151	0.000	0.288	0.288	0.288	0.288	1.151	100.00%
	Water Mains Rehab - GOWANLEA WSZ Water Mains Rehab - Gravir WSZ	Water Water	Base Base	2.296 0.345					Scottish Water Wide Scottish Water Wide	2.296 0.345	0.000 0.000	0.574 0.086	0.574 0.086	0.574 0.086	0.574 0.086		
	Water Mains Rehab - GREENBANK WSZ	Water	Base	0.345					Scottish Water Wide	0.942	0.000	0.086	0.086	0.086	0.086		
	Water Mains Rehab - GREENHEAD NO 7 A B WSZ	Water	Base	0.826	0.000	0.000			Scottish Water Wide	0.826	0.000	0.206	0.206	0.206	0.206	0.826	
	Water Mains Rehab - GUILTREEHILL WSZ Water Mains Rehab - HAZELDENE WSZ	Water Water	Base Base	1.151 0.404					Scottish Water Wide Scottish Water Wide	1.151 0.404	0.000 0.000	0.288 0.101	0.288 0.101	0.288 0.101	0.288 0.101		
3,570	,	,	,			. 5.550				. 5.154	0.000	5.101	5.101	5.101	0.101		

		Genera	al Project Informat	ion							Fina	ncial Information	n of Chosen Sce	nario.		Capital Ma	aintenance
1	2	3	4	6	7	8	12	13	14	16	17	18	19	20	21	30	31
		Water or		lutus IDE	No. IDE	Non Info	Forecast /			T-1-1 0 0 0 0 111		Destant	Destroit	Bustons	Devlant	Proportion of	Proportion of
		wastewater project		Infra - IRE	Non IRE	Non - Infra Proportion of	Actual – Project,	Forecast / Actual -		Total Q&SIII Project Cost	Project	Project Expenditure	Project Expenditure	Project Expenditure	Project Expenditure	Capital Maintenance	Capital Maintenance
Project		(primary	Project			Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
	Water Mains Rehab - Heathfield WSZ	Water	Base	0.263					Scottish Water Wide	0.263	0.000		0.066	0.066	0.066		
	Water Mains Rehab - HIGH BORLAND WSZ Water Mains Rehab - HIGHLEES WSZ	Water Water	Base Base	0.744 6.306		0.000			Scottish Water Wide Scottish Water Wide	0.744 6.306	0.000	0.186 1.577	0.186 1.577	0.186 1.577	0.186 1.577	0.744 6.306	
	Water Mains Rehab - Hillend Low WSZ	Water	Base	1.932		0.000			Scottish Water Wide	1.932	0.000	0.483	0.483	0.483	0.483	1.932	
	Water Mains Rehab - Hoy WTW WSZ	Water	Base	0.794		0.000			Scottish Water Wide	0.794	0.000	0.198	0.198	0.198	0.198	0.794	
	Water Mains Rehab - Inverness Regional WSZ Water Mains Rehab - Kettleton CWT WSZ	Water Water	Base Base	2.770 4.220		0.000			Scottish Water Wide Scottish Water Wide	2.770 4.220	0.000		0.692 1.055	0.692 1.055	0.692 1.055	2.770 4.220	
	Water Mains Rehab - Kingoldrum WSZ	Water	Base	0.419		0.000			Scottish Water Wide	0.419	0.000		0.105	0.105	0.105		
	Water Mains Rehab - Kirkhill WSZ	Water	Base	0.733		0.000			Scottish Water Wide	0.733	0.000	0.183	0.183	0.183	0.183		
	Water Mains Rehab - KIRKINTILLOCH WSZ Water Mains Rehab - Kirriemuir Hill WSZ	Water Water	Base Base	0.888 0.412		0.000			Scottish Water Wide Scottish Water Wide	0.888 0.412	0.000		0.222 0.103	0.222 0.103	0.222 0.103		
	Water Mains Rehab - KNOCK WSZ	Water	Base	0.449	0.000	0.000			Scottish Water Wide	0.449	0.000	0.112	0.112	0.112	0.112	0.449	100.00%
	Water Mains Rehab - Knockfell WSZ	Water	Base	1.604		0.000			Scottish Water Wide	1.604	0.000		0.401	0.401	0.401	1.604	
	Water Mains Rehab - KNOCKJARDER WSZ Water Mains Rehab - KNOCKRIVOCH WSZ	Water Water	Base Base	0.767 0.448	0.000	0.000			Scottish Water Wide Scottish Water Wide	0.767 0.448	0.000	0.192 0.112	0.192 0.112	0.192 0.112	0.192 0.112		
31694	Water Mains Rehab - Landheads WSZ	Water	Base	0.351	0.000	0.000			Scottish Water Wide	0.351	0.000	0.088	0.088	0.088	0.088	0.351	100.00%
	Water Mains Rehab - LARKFIELD WSZ Water Mains Rehab - Lawton WSZ	Water Water	Base	0.509 1.414		0.000			Scottish Water Wide Scottish Water Wide	0.509 1.414	0.000		0.127 0.354	0.127 0.354	0.127 0.354		
	Water Mains Rehab - LEGBRANOCK WSZ	Water	Base Base	3.033		0.000			Scottish Water Wide	3.033	0.000	0.758	0.758	0.758	0.758		
	Water Mains Rehab - Leith WSZ	Water	Base	0.904		0.000			Scottish Water Wide	0.904	0.000	0.226	0.226	0.226	0.226		
	Water Mains Rehab - Lewalt WSZ Water Mains Rehab - lizzes WSZ	Water Water	Base Base	1.028 0.283	0.000	0.000			Scottish Water Wide Scottish Water Wide	1.028 0.283	0.000 0.000	0.257 0.071	0.257 0.071	0.257 0.071	0.257 0.071	1.028 0.283	
	Water Mains Rehab - Loch Fergus WSZ	Water	Base	0.285		0.000			Scottish Water Wide	0.285	0.000	0.071	0.071	0.071	0.071	0.285	100.00%
	Water Mains Rehab - Lochgelly Spion Kop WSZ	Water	Base	0.286					Scottish Water Wide	0.286	0.000		0.071	0.071	0.071	0.286	
	Water Mains Rehab - Longplantings WSZ Water Mains Rehab - LONGRIGGEND PUMPED WSZ	Water Water	Base Base	0.417 0.619		0.000			Scottish Water Wide Scottish Water Wide	0.417 0.619	0.000	0.104 0.155	0.104 0.155	0.104 0.155	0.104 0.155	0.417 0.619	
	Water Mains Rehab - Lownie WSZ	Water	Base	0.353		0.000			Scottish Water Wide	0.353	0.000	0.088	0.088	0.088	0.088	0.353	
	Water Mains Rehab - LSMOUTH Coulardhill H WSZ	Water	Base	0.318		0.000			Scottish Water Wide	0.318	0.000		0.079	0.079	0.079	0.318	
	Water Mains Rehab - LSMOUTH Coulardhill L WSZ Water Mains Rehab - M2 MUGDOCK 2 WSZ	Water Water	Base Base	0.316 1.936		0.000		l I	Scottish Water Wide Scottish Water Wide	0.316 1.936	0.000	0.079 0.484	0.079 0.484	0.079 0.484	0.079 0.484	0.316 1.936	
	Water Mains Rehab - M4 MUGDOCK 4 WSZ	Water	Base	4.480	0.000	0.000			Scottish Water Wide	4.480	0.000	1.120	1.120	1.120	1.120	4.480	100.00%
	Water Mains Rehab - M5 MUGDOCK 5 WSZ	Water Water	Base	6.435					Scottish Water Wide	6.435	0.000		1.609 1.722	1.609 1.722	1.609	6.435	100.00% 100.00%
	Water Mains Rehab - Mannofield WSZ Water Mains Rehab - Manse Street	Water	Base Base	6.887 0.728	0.000	0.000			Scottish Water Wide Scottish Water Wide	6.887 0.728	0.000	1.722 0.182	0.182	0.182	1.722 0.182	6.887 0.728	100.00%
31713	Water Mains Rehab - MIDGLEN WSZ	Water	Base	0.345	0.000	0.000			Scottish Water Wide	0.345	0.000	0.086	0.086	0.086	0.086	0.345	100.00%
	Water Mains Rehab - MILLGLEN WSZ Water Mains Rehab - Morphie WSZ	Water Water	Base Base	0.440 0.383	0.000	0.000			Scottish Water Wide Scottish Water Wide	0.440 0.383	0.000	0.110 0.096	0.110	0.110 0.096	0.110 0.096	0.440 0.383	
	Water Mains Rehab - Morriston WSZ	Water	Base	0.574					Scottish Water Wide	0.574	0.000		0.096 0.144	0.144	0.144		
	Water Mains Rehab - Muirends WSZ	Water	Base	0.495		0.000			Scottish Water Wide	0.495	0.000		0.124	0.124	0.124	0.495	
	Water Mains Rehab - NE Water Mains Rehab - NEILSTON LOW WSZ	Water Water	Base Base	4.075 0.729		0.000			Scottish Water Wide Scottish Water Wide	4.075 0.729	0.000	1.019 0.182	1.019 0.182	1.019 0.182	1.019 0.182		
	Water Mains Rehab - Ness WSZ	Water	Base	1.381	0.000	0.000			Scottish Water Wide	1.381	0.000	0.345	0.345	0.345	0.345	1.381	
	Water Mains Rehab - North Uist WSZ	Water	Base	0.767					Scottish Water Wide	0.767	0.000		0.192	0.192	0.192	0.767	100.00%
	Water Mains Rehab - NW Water Mains Rehab - OVERTON HIGH WSZ	Water Water	Base Base	5.953 0.898	0.000	0.000			Scottish Water Wide Scottish Water Wide	5.953 0.898	0.000 0.000	1.488 0.225	1.488 0.225	1.488 0.225	1.488 0.225	5.953 0.898	
31724	Water Mains Rehab - OVERTON WSZ	Water	Base	0.486	0.000	0.000			Scottish Water Wide	0.486	0.000	0.122	0.122	0.122	0.122	0.486	100.00%
	Water Mains Rehab - PENWHAPPLE WSZ	Water	Base	2.752		0.000			Scottish Water Wide	2.752	0.000		0.688	0.688	0.688	2.752	
	Water Mains Rehab - Perth Burghmuir WSZ Water Mains Rehab - Pourie Panmure TM WSZ	Water Water	Base Base	1.054 0.898		0.000			Scottish Water Wide Scottish Water Wide	1.054 0.898	0.000		0.264 0.224	0.264 0.224	0.264 0.224	1.054 0.898	
31728	Water Mains rehab - Q&S3b - SWW	Water	Base	24.715	0.000	0.000			Scottish Water Wide	24.715	0.000	0.000	0.000	0.000	0.000	24.715	100.00%
	Water Mains Rehab - ROSEHALL DURCHA WSZ Water Mains Rehab - Rouchan WSZ	Water Water	Base	0.578 0.400					Scottish Water Wide Scottish Water Wide	0.578 0.400	0.000		0.145 0.100	0.145 0.100	0.145 0.100		
	Water Mains Rehab - Rouchan WSZ Water Mains Rehab - Salvabeg Lairg WSZ	Water	Base Base	0.400		0.000			Scottish Water Wide	0.716	0.000		0.179	0.179	0.179	0.716	
31732	Water Mains Rehab - Sandy Loch lower WSZ	Water	Base	0.495	0.000	0.000			Scottish Water Wide	0.495	0.000	0.124	0.124	0.124	0.124	0.495	100.00%
	Water Mains Rehab - SE Water Mains Rehab - South Uist WSZ	Water Water	Base Base	2.721 0.767					Scottish Water Wide Scottish Water Wide	2.721 0.767	0.000		0.680 0.192	0.680 0.192	0.680 0.192	2.721 0.767	
	Water Mains Rehab - Spynie WSZ	Water	Base	1.812					Scottish Water Wide	1.812	0.000		0.453	0.453	0.453		
	Water Mains Rehab - STAFFLAR WSZ	Water	Base	3.462		0.000			Scottish Water Wide	3.462	0.000		0.865	0.865	0.865	3.462	100.00%
	Water Mains Rehab - Stanley WSZ Water Mains Rehab - Stemster WSZ	Water Water	Base Base	0.326 0.501					Scottish Water Wide Scottish Water Wide	0.326 0.501	0.000		0.081 0.125	0.081 0.125	0.081 0.125	0.326 0.501	
	Water Mains Rehab - Stobhill WSZ	Water	Base	1.696		0.000			Scottish Water Wide	1.696	0.000		0.424	0.424	0.424	1.696	
	Water Mains Rehab - Stornoway Point WSZ	Water	Base	0.297		0.000			Scottish Water Wide	0.297	0.000		0.074	0.074	0.074		
	Water Mains Rehab - Stornoway Town WSZ Water Mains Rehab - STRATHAVEN RD WSZ	Water Water	Base Base	0.853 1.159					Scottish Water Wide Scottish Water Wide	0.853 1.159	0.000 0.000		0.213 0.290	0.213 0.290	0.213 0.290		
	Water Mains Rehab - SW	Water	Base	1.543					Scottish Water Wide	1.543	0.000		0.386	0.386	0.386		

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		Genera	al Project Informat								_		n of Chosen Sce			Capital Ma	
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		Water or					Forecast /									Proportion of	Proportion of
		wastewater		Infra - IRE	Non IRE	Non - Infra	Actual -			Total Q&SIII		Project	Project	Project	Project	Capital	Capital
		project		Proportion of	Proportion of	Proportion of	Project,	Forecast / Actual -		Project Cost	Project	Expenditure	Expenditure	Expenditure	Expenditure	Maintenance	Maintenance
Project		(primary	Project	Projects over	Projects over	Projects over	Construction	Project, Beneficial Use		(2006 - 2014	Expenditure	Profile	Profile	Profile	Profile	Element of	Element of
Autocode	Project Title	purpose)	Classification 1	£100k	£100k	£100k	Start Date	Date	Local Authority	inc)	Pre 2006/07	2006/07	2007/08	2008/09	2009/10	Project - £m	Project - %
04744	W. W. B. I. G. I. 1997	1	1-									2 224	2 224				100.00
	Water Mains Rehab - Swainbost WSZ	Water	Base	0.323					Scottish Water Wide	0.323	0.000	0.081	0.081		0.081	0.323	
	Water Mains Rehab - TANNAHILL WSZ	Water	Base	0.662					Scottish Water Wide	0.662	0.000	0.166	0.166			0.662	
	Water Mains Rehab - Torphichen WSZ	Water	Base	0.293					Scottish Water Wide	0.293	0.000	0.073	0.073		0.073	0.293	
	Water Mains Rehab - Towerhill WSZ	Water	Base	0.603					Scottish Water Wide	0.603	0.000	0.151	0.151		0.151	0.603	
	Water Mains Rehab - Trentham WSZ	Water	Base	0.280					Scottish Water Wide	0.280	0.000	0.070	0.070		0.070	0.280	
	Water Mains Rehab - Trinity WSZ	Water	Base	0.453					Scottish Water Wide	0.453	0.000	0.113	0.113		0.113	0.453	
	Water Mains Rehab - Tulloch WSZ	Water	Base	0.379					Scottish Water Wide	0.379	0.000	0.095	0.095		0.095	0.379	
	Water Mains Rehab - UDSTON WSZ	Water	Base	1.531					Scottish Water Wide	1.531	0.000	0.383	0.383		0.383	1.531	
	Water Mains Rehab - WATERLOO SR/COULTER DAER WSZ	Water	Base	0.995	0.000				Scottish Water Wide	0.995	0.000	0.249	0.249		0.249	0.995	
	Water Mains Rehab - Westhills WSZ	Water	Base	0.464					Scottish Water Wide	0.464	0.000	0.116	0.116		0.116	0.464	
	Water Pumping Stations - Capital Maintenance - SWW	Water	Base	0.000	0.000	31.298			Scottish Water Wide	31.287	0.011	1.542	4.183	4.183	4.183	31.298	100.009
	Water Resources - Flood studies to comply with the Reservoirs	10/-4	0						0 441 - 1- 1-41 - 1-41 - 1-41 - 1								
	Act - Rolling programme	Water	Quality	0.000	1.745	0.000			Scottish Water Wide	1.745	0.000	0.218	0.218	0.218	0.218	0.000	0.009
	Water Resources - WFD controls on abstraction and																
	impoundment - Rolling Programme	Water	Quality	0.000	72.984	74.554			N/A	147.538	0.000	13.755	34.460	34.460	34.774	0.000	0.009
	Water Resources - WFD Controls on Impoundment - construction																
	of fishpass	Water	Quality	0.000	44.266	0.000			N/A	44.266	0.000	0.000	0.000	2.213	2.213	0.000	0.009
	Water Resources - WFD drinking water protected areas																
	(production of catchment management plans) - Rolling																
	Programme	Water	Quality	0.000	0.000	0.000			Scottish Water Wide	0.024	0.000	0.007	0.010	0.007	0.000	0.000	0.009
	Water Resources - WFD Measurement & Monitoring - Rolling																
	Programme	Water	Quality	0.000	0.000	11.622			N/A	11.569	0.053	3.471	4.628	3.471	0.000	0.000	0.009
	Water Resources - WFD restoration of abandoned engineering																
	works -Rolling Programme	Water	Quality	0.000					N/A	3.518	0.000	0.000	0.000		0.176	0.000	
	Water Resources Capital Maintenance - Aqueducts - SWW	Water	Base	12.101	0.000	0.000			Scottish Water Wide	12.101	0.000	1.210	1.210	1.210	1.210	12.101	100.009
	Water Resources Capital Maintenance - Dams/impounding																
	Reservoirs - SWW	Water	Base	11.883	0.000				Scottish Water Wide	11.883	0.000	1.485	1.485	1.485	1.485	11.883	
	Water Resources Capital Maintenance - Intakes - SWW	Water	Base	0.000					Scottish Water Wide	9.063	0.003	0.491	1.347	1.347	1.347	9.066	
	Water Safety Plans - SWW	Water	Quality	0.000					Scottish Water Wide	8.981	0.000	1.123	1.123			0.000	
	Water Storage (SRs WTs etc) - SWW	Water	Base	0.000					Scottish Water Wide	31.336	0.011	1.687	4.660		4.660	31.347	
	Water Treatment Works - Capital Maintenance - SWW	Water	Base	1.990					N/A	99.480	0.035	2.035	4.395		4.395	99.515	
	WATERNISH WTW - Completion	Water	Quality	0.000					Scottish Water Wide	0.435	0.000	0.435	0.000		0.000	0.000	
	WATERNISH WTW - Upgrade	Water	Quality	0.000			28/7/13		Scottish Water Wide	0.351	0.000	0.000	0.000		0.000	0.000	
	Waterstein WTW - Upgrade	Water	Quality	0.000			28/7/13		Highland	0.179	0.000	0.000	0.000		0.000	0.000	
	WELLBANK STW Upgrade	WasteWater	Quality	0.000			24/12/12			1.003	0.000	0.000	0.000		0.000	0.000	
	West Lewis WTW - Upgrade	Water	Quality	0.000			23/9/08		Western Isles	5.273	0.000	0.130	0.310		1.063	0.000	
	WEST LINTON STW Upgrade	WasteWater	Quality	0.000			11/3/12		Borders, The	0.716	0.000	0.000	0.000		0.000	0.000	
	WESTRAY WTW - Completion	Water	Quality	0.000					Scottish Water Wide	0.221	0.000	0.221	0.000		0.000	0.000	
	WESTRAY WTW - Upgrade	Water	Quality	0.000			10/4/08		Scottish Water Wide	0.594	0.000	0.035	0.199		0.000	0.000	
	Whalsay WTW - Upgrade	Water	Quality	0.000			28/7/08		Shetland Islands	0.451	0.000	0.027	0.151			0.000	
	WHITECROSS STW Upgrade	WasteWater	Quality	0.000			11/3/13			0.628	0.000	0.000	0.000		0.000	0.000	
	Whitehillocks WTW - Upgrade	Water	Quality	0.032			23/9/08	31/3/10	Angus	5.955	0.184	0.911	3.783		0.001	1.585	
31778	WINCHBURGH STW Refurb	WasteWater	Base	0.000	0.000	0.647			West Lothian	0.647	0.000	0.000	0.009	0.054	0.584	0.647	100.009
31779	Windyfield Rhynie WTW - Upgrade	Water	Quality	0.000	0.012	0.574	10/4/08	31/3/09	Aberdeenshire	0.586	0.000	0.034	0.196	0.355	0.000	0.000	0.009
31780	Winterhope WTW - Upgrade	Water	Quality	0.000	0.067	3.271	24/12/08		Dumfries And Galloway	3.338	0.000	0.134	0.607	2.500	0.097	0.000	
	Yarrowfeus WTW - Upgrade	Water	Quality	0.000		0.159	28/7/13	21/2/1/	Scottish Borders	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.009
31781	failowieus W I W - Opqiade	vvalei	Quality	0.000	0.003	0.133		3 1/3/ 14	Scollisti Dolueis	0.102	0.000	0.000	0.000	0.000	0.000		

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