

Strategic Review of Charges

2002–2006

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**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

Foreword

This is my first full Strategic Review of Charges. It covers four financial years from April 2002 to March 2006. Unfortunately, as with my initial interim Review and notwithstanding the significant scope for efficiencies that my office has identified, I have to recommend that Scottish Ministers sanction an increase in the levels of charges for most customers. The creation of 'Scottish Water' – if this is approved by the Parliament – will however significantly limit the increases in costs to be borne by customers across Scotland. I trust that customers of the Scottish water industry will be relieved that by the end of this Review period, real increases in tariffs will no longer be required in order that we all enjoy an environmentally and financially sustainable service. If the recommendations of this Strategic Review are accepted and the management of the proposed Scottish Water achieve the savings expected, then it would be my expectation that charge increases after 2006 should be restricted to the rate of inflation or below – unless there is a further major tightening in environmental standards, or efficiency is not maintained or improved.

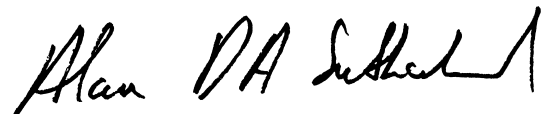
The role of regulation is to ensure that the interests of customers are safeguarded and that customers receive greater value for money. To this end, I intend that my office continues to adopt a rigorous and challenging approach to the performance of the industry. I stand ready to give credit when the industry delivers the improvements in value for money that the customer has the right to expect. I will also ensure that shortfalls in levels of service are immediately highlighted. Any new entrant to the Scottish water industry can expect to be regulated in the same robust manner. The interests of customers are, and will remain, paramount.

This Review seeks to address the customer's need for a sustainable Scottish water Industry. It recommends a revenue cap that should place the industry on a sound financial foundation, where there will be a balance between the financing demands placed on this and future generations. For the first time, this Review establishes a financing regime that is capable of meeting the ongoing costs of investment over the next and subsequent generations. This Review should also therefore ensure that future environmental standards and asset replacement needs can be met as and when they fall due. This will ensure that an improved quality of service is available to all at the lowest sustainable cost. It is for the owner and the management of the industry to decide how best to deliver value to customers within the revenue cap, provided, of course, that

the agreed environmental, public health and customer service targets are met.

This Review also contains significant recommendations on improvements to customer service. Significant progress has been made - but there is still much that needs to be done if the public sector supplier is genuinely to be the supplier of choice, not of necessity.

In closing, I would like to thank my Consultative Committees, all those who are members of the Water Panel and those who have attended one of the 33 public meetings, arranged throughout Scotland over the last 18 months. 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 - who have found the time to explain their views to me. Many thanks also go to all those who have read this Review in part or in full, and therefore helped to improve my advice. Finally, I must highlight the contribution of the whole team in my office to what, I believe, is a thorough strategic review of the industry. I believe that this Review proposes a significant, but realistic, challenge to the management of the water industry in Scotland - but 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

15 October 2001

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Executive Summary

Executive Summary

a) Introduction

I was commissioned to complete this Strategic Review of Charges by the Minister for Environment and Rural Development, Ross Finnie, MSP, on 21 August 2001, under section 13 of the Water Industry Act 1999. In this Review, I provide advice on the revenue caps that should be placed on the current three water authorities or on the proposed Scottish Water, if Parliament approves this initiative. I take into account all of the information in the commissioning letter, namely that:

- the advice should cover the amount of income needed by each of the three water authorities, and relate to Charges Schemes that will be made for the period 2002-03 to 2005-06;
- the advice should cover charges that would be raised by a single authority, on the basis that domestic charges will be completely harmonised across Scotland by 2005-06;
- any proposals for savings in the capital programmes of the authorities must be achievable through increased managerial efficiency, rather than through the deferment of outputs;
- public expenditure constraints under Resource Budgeting are a binding constraint;
- Ministers would like to see a full risk analysis of the components of the advice.

This executive summary starts by summarising my advice and the recommendations that I am making to the Minister. There

then follows ten sections that cover all the major areas of analysis in my Review. I start with a summary of the key issues, a short background to the Scottish water industry and a description of the investment issues it faces. I then address the vital areas of revenue and costs. These sections summarise my views on competition and the efficiency targets that I have set for the industry. The executive summary closes with some issues for the Scottish Executive to consider for action, a summary of the outlook for the next Review period, and an outline of the requirement for public expenditure.

b) Advice to Minister for Environment and Rural Development

I propose that the Minister adopts the following advice, which has been developed as a result of my Strategic Review of Charges:

“i) Revenue cap for the three Scottish water authorities

The revenue cap profile for the three Scottish water authorities in the event that the Scottish Parliament does not approve Scottish Water is given in Table 1.

ii) Revenue cap for the proposed single authority, Scottish Water

The revenue cap profile for Scottish Water, in the event that the Scottish Parliament approves this initiative is given in Table 2.

Table 1: Revenue cap for the three Scottish water authorities

Water Authority	Projected revenue 2001-02	2002-03	2003-04	2004-05	2005-06	Total increase	
						Actual	Real
East	£249.3m	11.8%	10.3%	11.9%	2.7%	41.7%	28.4%
North	£232.0m	12.4%	11.4%	6.0%	2.5%	36.0%	23.2%
West	£352.2m	10.5%	11.9%	14.3%	2.3%	44.6%	31.0%

Table 2: Revenue cap for the proposed single authority, Scottish Water

Water Authority	Projected revenue 2001-02	2002-03	2003-04	2004-05	2005-06	Total increase	
						Actual	Real
Scottish Water	£825.9m ¹	7.5%	7.8%	4.6%	(1.3%)	19.6%	8.4%

¹ Projected 2001-02 revenue for the proposed Scottish Water differs from the sum of the projected revenues from the three existing authorities because of inter-authority trading.

iii) Harmonisation of charges

Charges should be harmonised across Scotland for both domestic and non-domestic customers, by no later than 2005-06.

iv) Cost reflective tariffs

Scottish Water should seek to develop tariffs that more broadly reflect the economics of the service provided. This will require that the fixed element of the charge faced by customers increases significantly from the current level.”

c) Key recommendations

The Minister is invited to accept the following recommendations, which have been developed as a result of my Strategic Review of Charges:

- i) To endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and the proposed Drinking Water Quality Regulator to ensure that consistent output measures and metrics are collected and monitored. This project will ensure that the environmental and public health benefits and the sustainable industry for which they are paying are actually delivered.
- ii) To instruct the water authorities or the proposed Scottish Water to adopt appropriate accounting separation. A similar accounting separation should also be required by the licence conditions of new entrants to the Scottish water industry.
- iii) To require the publication by my office of annual reports on the performance of the water industry in Scotland. These reports would cover operational costs, delivery of investment and the level of customer service.
- iv) To endorse further study into the affordability of water charges. To instruct water authority management to work with the local authorities and others to improve the support that is offered to vulnerable customers who find it difficult to pay their charges.
- v) To establish clear and public criteria for the payment of incentives to executive directors. These criteria should be based on overall achievement, within the proposed revenue

cap, of the required environmental and public health compliance targets and customer service standards.

d) Notes to the advice and recommendations

The Minister is invited to note that:

- i) My advice on revenue caps for the proposed Scottish Water is fully consistent with the public expenditure limits outlined in the commissioning letter. The totals are as in Table 3.
- ii) My advice on revenue caps for the three existing authorities is based on the following public expenditure split:

Table 3: Revised public expenditure split

Water Authority	2002-03	2003-04	2004-05	2005-06
East	£77.1m	£75.4m	£40.0m	£49.8m
North	£136.6m	£118.8m	£145.2m	£133.0m
West	£100.6m	£105.5m	£114.5m	£116.9m
Total	£314.3m	£299.7m	£299.7m	£299.7m

- iii) My estimate of the impact on domestic charges for the three existing authorities with this revised split of public expenditure is shown in Tables 4 and 5.

Domestic prices depend in large part upon the percentage of total revenue raised from the non-domestic sector. This percentage ought to reflect broadly the actual costs of supply to the non-domestic sector. At this time, however, there is insufficient cost information to justify any material change in the split of revenue between domestic and non-domestic customers. It is possible that detailed cost information could suggest a lower contribution from large business and a slightly higher contribution from domestic customers and smaller businesses. If such information becomes available, the likely maximum impact on the projected domestic charges is likely to be between 5% and 10%. Any such increase should, of course, be phased to ensure that charges remain as affordable as possible.

- iv) My estimate of the impact on domestic charges in the event that Scottish Water is established is shown in Tables 6 and 7. See notes to d (iii) above.

Table 4: Likely impact on domestic prices for the three authorities under revised public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06	Total increase	
					Actual	Real
East	12.0%	10.3%	12.0%	2.0%	41.1%	27.9%
North	12.0%	11.0%	5.5%	2.0%	33.8%	21.2%
West	10.5%	12.0%	14.5%	1.5%	43.8%	30.3%

Table 5: Resulting Band D charge

Water Authority	2001–02	2002–03	2003–04	2004–05	2005–06	Total increase
East	£270.00	c.£303	c.£333	c.£374	c.£381	c.£111
North	£350.18	c.£395	c.£440	c.£465	c.£474	c.£124
West	£266.40	c.£294	c.£330	c.£377	c.£383	c.£117

Table 6: Likely impact on domestic prices under the proposed Scottish Water

Water Authority	2002–03	2003–04	2004–05	2005–06	Total increase	
					Actual	Real
Scotland	7.2%	7.4%	4.1%	0.0%	19.9%	8.6%
East	9.9%	9.9%	5.2%	0.0%	27.1%	15.1%
North	0.0%	0.0%	(2.1%)	0.0%	(2.1%)	(11.3%)
West	9.9%	9.9%	6.6%	0.0%	28.8%	16.6%

Table 7: Resulting Band D charge²

Water Authority	2001–02	2002–03	2003–04	2004–05	2005–06	Total increase
East	£270.00	c.£296	c.£325	c.£343	c.£343	c.£73
North	£350.18	c.£350	c.£350	c.£343	c.£343	(c. £7)
West	£266.40	c.£293	c.£321	c.£343	c.£343	c.£77

Table 8: Revenue caps for the three water authorities in the event of the current public expenditure split

Water Authority	Revenue 2001–02	2002–03	2003–04	2004–05	2005–06	Total increase	
						Actual	Real
East	£249.3m	11.8%	8.3%	5.9%	3.2%	32.3%	19.9%
North	£232.0m	17.4%	5.5%	20.1%	0.5%	49.5%	35.4%
West	£352.2m	10.5%	11.9%	16.4%	2.7%	47.8%	33.9%

v) In the event that the current split of public expenditure between the three authorities is maintained, the revenue caps shown in Table 8 would be required.

vi) This split of public expenditure would be as shown in Table 9.

Table 9: Current public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06
East	£87.1m	£83.1m	£83.1m	£83.1m
North	£116.6m	£111.1m	£111.1m	£111.1m
West	£110.6m	£105.5m	£105.5m	£105.5m
Total	£314.3m	£299.7m	£299.7m	£299.7m

vii) My estimate of the impact on domestic charges would be as shown in Tables 10 and 11. See notes to d (iii) above.

viii) The proposed revenue caps for the proposed Scottish Water and for the existing three authorities assume the operating cost efficiency targets, from a 2000-01 base, shown in Table 12.

ix) These revenue caps also assume the capital expenditure efficiency targets, from a 2000-01 base, shown in Table 13.

² I have calculated the Band D charge separately for water and waste water. In Table 7 I have presented the total estimated bill, assuming the customer is connected to both the water and waste water service.

Table 10: Likely impact on domestic prices for the three authorities under current public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06	Total increase	
					Actual	Real
East	12.0%	8.1%	5.5%	2.5%	30.9%	18.6%
North	17.0%	5.0%	19.8%	0.0%	47.2%	33.3%
West	10.5%	12.0%	16.8%	2.0%	47.4%	33.6%

Table 11: Resulting Band D charge

Water Authority	2001–02	2002–03	2003–04	2004–05	2005–06	Total increase
East	£270.00	c.£303	c.£327	c.£345	c.£354	c.£84
North	£350.18	c.£411	c.£433	c.£522	c.£522	c.£172
West	£266.40	c.£294	c.£330	c.£385	c.£393	c.£127

Table 12: Operating cost efficiency targets

Water Authority	2002–03	2003–04	2004–05	2005–06
Scotland (Total)	£63.0m	£96.9m	£115.9m	£135.8m
East	£13.1m	£20.2m	£24.2m	£28.3m
North	£14.9m	£22.9m	£27.4m	£32.1m
West	£35.0m	£53.9m	£64.4m	£75.4m

Table 13: Capital expenditure efficiency targets

Water Authority	2002–03	2003–04	2004–05	2005–06
Scotland (Total)	£70.8m	£102.1m	£169.1m	£207.0m
East	£0.0m	£8.7m	£18.8m	£29.3m
North	£34.8m	£40.6m	£66.0m	£73.2m
West	£36.1m	£52.8m	£84.2m	£104.5m

x) The dual homes discount cannot be justified by the economics of water supply and sewage collection. While it is true that less water may be used in a second household, this reduces costs of supply only very marginally. In essence this means that dual homeowners are in receipt of a subsidy from other households. Furthermore, in a competitive retail market it may not be possible to maintain this individual allowance and the link to property bands. Ministers may wish to consider whether this discount, as currently applied, cannot be better targeted at vulnerable customers.

e) Key messages

This Strategic Review of Charges comes at a most opportune, though challenging time for the water industry in Scotland. Some challenges are specific to the industry in Scotland, and

there are external pressures, which all stakeholders will have to take into account in ensuring a sustainable future. This Review makes recommendations that minimise the charges faced by customers in the short, medium and long term.

A sustainable industry will require:

- increased revenue to the minimum level consistent with the meeting of on-going maintenance and environmental/public health compliance;
- challenging but achievable efficiency targets;
- further improvement in customer service;
- harmonised and broadly cost-reflective tariffs;
- improved regulation and financial control.

My Review addresses all of these issues.

i) Revenue

The Scottish industry has had to spend more, in the past several years, than it receives in customer charges. This is a problem because there is a likelihood that sustained investment at current levels will be required for the foreseeable future. Continuing to borrow to eliminate the gap between revenue and expenditure would only make matters worse. Unfortunately, revenue will therefore have to increase. This Review period should, however, see an end to real price increases.

The principal output of my Review is a recommended revenue cap. My recommendation has taken into account the needs and expectations of customers and the needs of the industry. It is for management and the owner to determine how best to use the resources available within this revenue cap in order to

deliver the agreed improvements to levels of services. This explains my recommendation that executive directors should be incentivised to meet customer service, environmental and public health outputs within the revenue cap. The efficiency targets, assumed contribution from new business and the proceeds of property disposals are a means to an end, not an end in themselves. It is not in the customer interest that management be judged against the means to an end rather than the achievement of the agreed levels of service for customers.

ii) Efficiency

The need for increased revenue can be reduced markedly by an improvement in the operating cost and capital expenditure efficiency of the Scottish water industry. The level of efficiency had been declining. This trend, however, now appears to have been halted and reversed. This Review sets challenging but appropriate targets, which should ensure that this recent progress continues.

iii) Customer services

Customer service has improved since 1996. There are improved Guaranteed Minimum Standards, but there is some way to go to improve compliance. Improvements in customer service will be a critical element in any response to retail competition.

iv) Harmonised and broadly cost-reflective tariffs

There are significant anomalies in the charges that result from the current three authority model. It is, for example, cheaper to supply Dundee than North Fife, yet charges are much higher in Dundee. A harmonised charge across Scotland is equitable for all customers. At the current time the tariff structure does not reflect the economic costs of supply and, as a result, can send inappropriate signals to customers. It would be in the general customer interest to have more broadly cost-reflective tariffs. This would probably mean higher fixed and lower volumetric tariffs.

Domestic customers with a meter are currently regarded as 'non-domestic' by the authorities. It is likely to be difficult to draw an accurate line between actual domestic and non-domestic customers. This suggests that tariffs ought to be harmonised for all customers.

v) Regulation and financial control

I have dedicated significant resources to establishing a robust and objective regulatory reporting regime. Considerable effort is now required to improve further the overall quality of management information. This will be crucial to delivering a first class service to customers. There is also a need for the level of financial control and management of the industry to be improved. I believe that accounting separation would contribute significantly to this.

Good management can rise to the challenge of creating the sustainable industry that customers need and deserve. I am confident that they can meet the challenges that I set in this Review.

- I have adopted a tried and tested methodology to calculate the efficiency targets for operating costs, capital expenditure and the potential merger savings from the creation of the proposed Scottish Water.
- I have reviewed the realism of these targets against what has already been achieved in England and Wales and my risk analysis shows that there is a very high probability that Scottish Water could achieve its targets.
- I believe the potential threat to revenue is limited and can be significantly mitigated by management action on cost, the introduction of broadly cost-reflective tariffs and improved customer service.
- I have compared my conclusions on the development of competition in water services with other utility services and have discussed my views with industry analysts. There was a high degree of consensus.

However, I do have doubts that the existing model of three authorities would be capable of the organisational change, improvement in efficiency and responsiveness to customers that will be required.

f) Background

Water and sewerage is a major industry in Scotland. Virtually everyone in Scotland is a customer and we, as customers, all assume that the water will flow when we turn on the tap and that our dirty water will disappear when we pull the plug.

At the current time, Scotland is served by three water authorities.

- East of Scotland Water Authority, which serves the former Lothian, Borders, Fife, Central Regional Councils. The authority also took on responsibility for the Kinross area of Tayside and the services provided by the Central Scotland Water Development Board.
- North of Scotland Water Authority, which serves the former Highland, Grampian and Tayside Regions (excluding Kinross) and the Island Councils of Orkney, Shetland and the Western Isles.
- West of Scotland Water Authority, which serves the former Dumfries & Galloway and Strathclyde Regional Council Areas³.

A proposal to establish Scottish Water was launched by the Scottish Executive during February 2001. This proposal was endorsed in a subsequent consultation that received a large response from stakeholders. Scottish Water would currently rank as equivalent to the twelfth largest Scottish registered company and it will grow to have around £1 billion of revenue by 2005-06.

The principal benefits to customers of the initiative to establish Scottish Water are: a harmonised tariff across Scotland; greater scope for efficiency; and improved customer service.

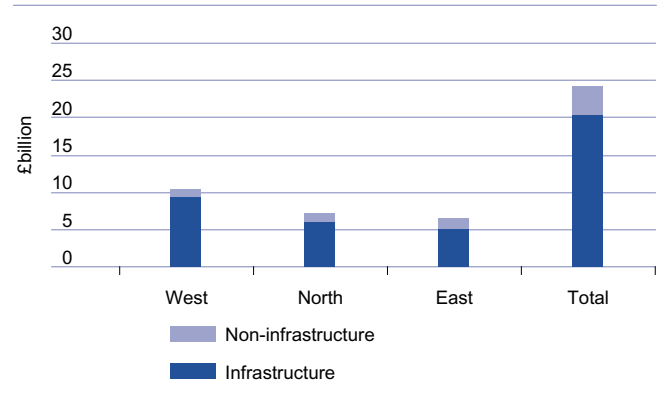
There is a clear consensus amongst stakeholders that water should remain in the public sector. I believe that Scottish Water represents the best chance to ensure that happens, because of the benefits that will accrue to customers from the merger.

g) Investment

The Scottish water industry has not invested sufficiently to meet environmental standards and to maintain its assets properly. These assets have a total replacement value of some £25 billion. To put this in perspective, the total revenues of the water industry in Scotland will be just over £800 million in the current year. Over £400 million of this revenue goes in operational and interest costs. This means that a maximum of £400 million is available to maintain the existing assets and to meet quality improvements (such as properly treating sewage before

discharge to rivers and estuaries). This would suggest an average asset life of over 60 years.

Figure 1: Split of Scottish water industry assets by estimated replacement costs⁴



This may be reasonable for water mains and prudent for sewers, but it is unrealistic for above-ground assets (such as treatment works).

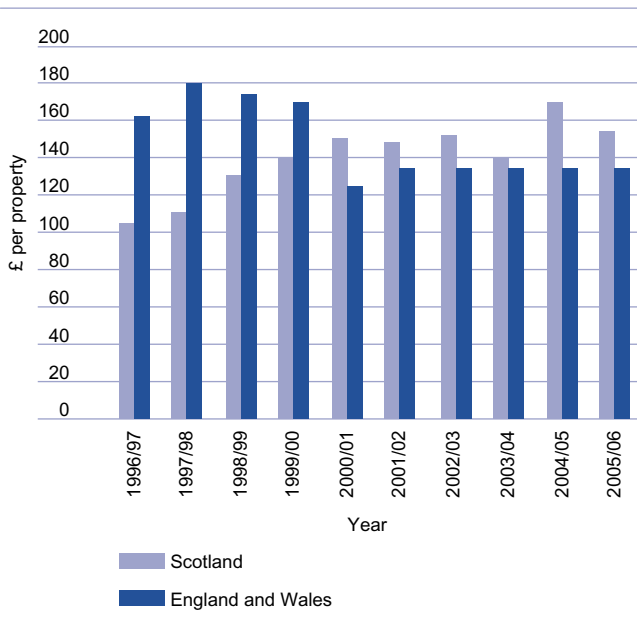
A comparison with the levels of investment in England and Wales clearly shows the extent of this under-investment. It is also important to note that investment per property is typically higher in more rural areas, and therefore levels of investment in Scotland should be on balance higher than in England and Wales.

The Scottish Executive has responded to the historic under-investment by introducing the Quality and Standards process. This is a coordinated attempt to assess the required level of investment in the water industry in Scotland. This process brings together the Scottish Executive, the Drinking Water Quality Regulator, Scottish Environment Protection Agency, the water authorities and my office to define the investment programme for the next four years. This includes both the investment required to comply with environmental and public health standards and the investment required to maintain the existing assets. This should improve the service offered to customers by ensuring cleaner rivers and beaches, by reducing sewer flooding and by improving drinking water quality.

³ There is a small area (around Cumbernauld) where water is provided by East of Scotland Water Authority and sewerage services by West of Scotland Water Authority. This is the exception to the regional council boundaries.

⁴ Support service assets such as offices, laboratories and depots, valued at around £160 million, are not included in Figure 1

Figure 2: Levels of capital investment per property 1996-06



The Quality and Standards process defined three choices, which were described in a consultation document from the Scottish Executive in January 2001. The central option received the most support. This option ensured that there was no further deterioration in the asset base of the authorities and that the industry would comply with all of the environmental and public health deadlines. The final investment programme also reflected the response to the consultation that there should be money available to ease development constraints and accelerate the extension of sewers and water mains to rural properties.

The cost of this investment programme is approximately £2.3 billion over the four years from 2002 to 2006 (see Figure 3).

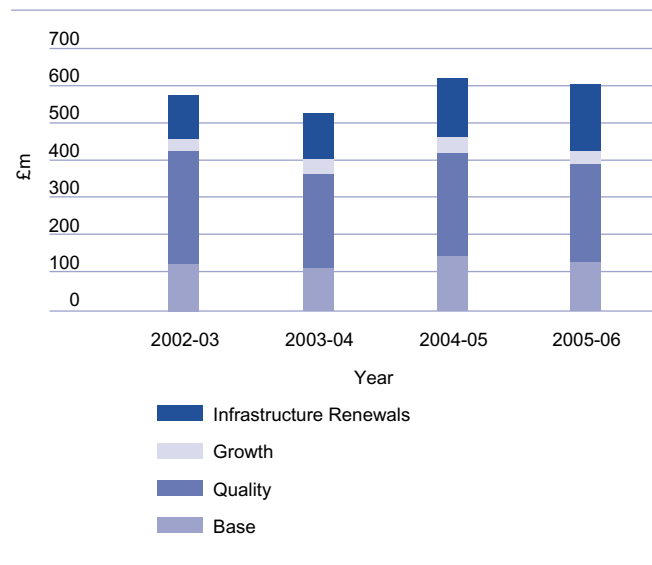
This investment is equivalent to around £1,000 for each customer, over the four years.

One concern in my interim Review in 1999 was that the water authorities were not maintaining their infrastructure effectively. Investment in infrastructure was significantly below the long run normative cost. This is the cost of maintaining the infrastructure in its current condition and is defined as the modern equivalent

asset cost⁵ divided by the average life expectancy of the assets.

Proper maintenance of the underground assets is essential to delivery of an improved environment. There is little point in investing huge sums in better treatment works if the underground infrastructure is not fit for its purpose.

Figure 3: Capital investment by purpose category 2002-06



Another indication of the extent of historical under-investment in Scotland is the condition profile of mains and sewers. Condition Grades 4 and 5 mean that on average the assets are within 10-15 years of the end of their expected life (see Table 14).

My advice on revenue caps takes full account of this much needed investment. Customers throughout Scotland will benefit from this investment - indeed some 41% of the total investment programme will be directed towards improving service in rural areas.

I have applied a capital efficiency target and the achievement of this will significantly reduce the price implications for customers. I will also be monitoring the delivery of this capital programme to ensure that the improvements in levels of service to customers and in environmental compliance that have been promised to customers are actually delivered.

⁵ The gross replacement cost of the water mains and sewers with modern equivalent assets. According to Ofwat's Information Note 35A March 2000, the average for water mains is £120 per metre and for sewers £345 per metre.

Table 14: Condition of mains and sewers as at June 2001

	East		North		West		England average	
	Water	Waste water	Water	Waste water	Water	Waste water	Water	Waste water
Categories 1-3	66%	88%	34%	71%	73%	68%	88%	90%
Categories 4-5	34%	12%	66%	29%	27%	32%	12%	10%

h) Revenue issues

i) Competition

The introduction of the Competition Act 1998 has raised the prospect of competition in the water services market. One of the main aims in this Review was to try to understand how competition might develop and its potential impact on customers. It is, however, important to point out that a small amount of competition has always existed in the industry. This is usually termed off-network competition and it results when large industrial concerns meet their own effluent treatment or water needs outside the public water system.

I have concluded that there will be two principal types of competition: in the market and for the market. I believe that the customer will benefit not only from the choice that competition provides but also because there will be an increased pressure to reduce costs and improve the level of service offered to customers. My analysis further suggests that there is not likely to be any significant threat to the total revenue of the industry in Scotland as a result of competition, provided the industry makes itself efficient and offers broadly cost-reflective prices to all customers.

In the market competition describes the situation where there are genuine markets for a product or service. A water business typically engages in a broad range of activities. It abstracts and treats water; it distributes potable water; it bills and provides services to the customer; it collects sewage and trade effluent; and treats and disposes of the treated sewage effluent safely. My analysis concludes that there is little likelihood of a market developing for any of these activities except for the retail/customer service function. This is because competition is unlikely where there are significant barriers to entry. Barriers to entry may result from cost, industry structure, logistical issues, capacity or regulatory reasons. My conclusion is that the local nature of the distribution network and the high proportion of

costs represented by the natural monopoly element (the distribution and collection system) will limit the opportunities for new entry to the market.

Retail competition would not be dissimilar from the competition that has developed in the electricity and gas markets. Essentially, a new entrant would not have to own any water assets or indeed treat water or sewage. The new entrant would act as a broker between the customer and the operator of the water and sewerage infrastructure. There will be an opportunity for a broker if economies of scale or scope exist within the customer service activity. This is likely if the new entrant is already billing the same customer for a utility service. Naturally, a new entrant could also be successful if the incumbent supplier was less efficient, or incorrectly allocated costs to its activities.

The Competition Act introduced into UK law the concept of an essential facility. This has the result that the owner of an asset, which it would not be economically viable to replicate, cannot unreasonably refuse to allow a new entrant to use this asset. The underground infrastructure of the water industry would almost certainly qualify as an essential facility. This makes possible common carriage, in theory allowing a new entrant to abstract and treat water separately and to add this to the incumbent supplier's network. The new entrant would be able to capture more of the value added of the service provided to customers. I do not believe that this is likely to be attractive to a new entrant, unless the incumbent is not allocating costs correctly or is very inefficient. The local nature of the infrastructure will limit opportunities and require a supply/demand balance to be maintained at too localised a level for it to be economically viable in most instances.

My analysis of the costs incurred at retail level has highlighted the limited impact that retail competition can have on the total revenues of the incumbent supplier.

Table 15: Cost incurred at the retail level, across the three authorities

Retail supply function	Domestic	Non-domestic	Total
2000–01 costs	Operating costs	Operating costs	
Billing	£0.36m	£3.45m	£3.81m
Call centre	£1.29m	£0.64m	£1.93m
Meter reading	£0m	£1.52m	£1.52m
Key account management	£0m	£1.62m	£1.62m
Debt recovery	£8.27m	£5.18m	£13.45m
Bad debt	£25.53m	£15.99m	£41.53m
Local authority charge for billing & collection	£11.49m	£0m	£11.49m
Total	£46.95m	£28.40m	£75.35m

My analysis has assumed a very prudent annual depreciation charge of £25 million. The industry in Scotland is required to earn a 6% real rate of return on capital employed, which would add a further £8.5 million per year. The total revenue of the retail business in Scotland is therefore just under £110 million.

Even if the Scottish water industry were to lose 80% of its retail non-domestic customers and 30% of its retail domestic customers, the impact on total revenue would not be too significant. Total revenue would fall by around 7.5%, or some £55 million per year. This is a large amount of money, but relative to the scope for efficiency within the industry, it is less important. This £55 million would represent less than 15% of the annual efficiency target for the final year of this Review period.

It should actually be possible to retain a much greater share of the retail market. There would seem to be far less opportunity to offer the same financial inducements that have characterised the competition to attract electricity and gas customers. There would not seem to be sufficient retail margin for most domestic customers to offer them even a £10 reduction on an annual bill. The evidence from other competitive utility markets would suggest that this is not likely to be sufficient to encourage most customers to switch supplier. Improved customer service from the incumbent could ensure that the new entrant would find it difficult to attract water customers. The only exception to this would be those customers who appreciate the convenience of

being billed for all of their utility services by one supplier. However, even this could be addressed by the Scottish water industry working in partnership with another utility services company.

Experience from other utilities has demonstrated that retail competition has brought choice to customers, better levels of service and lower prices. These lower prices have resulted partly from more efficient provision of the retail service but also because the retail suppliers have applied pressure on the natural monopolies to reduce costs. Choice will inevitably improve levels of service. My analysis would suggest that customers can only benefit from the introduction of competition.

For the market competition exists when incumbent suppliers make choices about how they deliver a service. They may decide to contract out existing or new activities. This could include a billing activity or a call centre, or it could involve responsibility for maintenance or operation of equipment. Customers do not benefit from increased choice as a result of this type of competition, but they do typically benefit from better service and lower prices.

City analysts have estimated that outsourced contracts could account for as much as 35% of the total spending on operating assets⁶ by English and Welsh water companies. The not-for-profit Welsh Water (Dŵr Cymru) has contracted out some 85% of its operating and capital expenditure.

The Scottish water industry already makes significant use of service providers (the most obvious example is their billing contract with Scottish local authorities). It is interesting that Welsh local authorities were able to win, on a competitive basis, a maintenance contract for a significant proportion of the sewerage network of Welsh Water (Dŵr Cymru).

I believe that the broadly cost-reflective prices that I recommend in this Review will limit the attractions of an off-network solution for customers. Most large customers, with whom I have met, have stated clearly that cost has forced them to look at an off-network solution. There are significant economies of scale in the operation of an effluent treatment plant. If the price offered to the customer is broadly reflective of the efficient costs of supply, then the economies of scale

⁶ In a report entitled *O and M Markets*, September 2000, Robert Miller-Bakewell of Merrill Lynch forecast that 35% of the operation and maintenance market could be outsourced by 2005.

enjoyed by the incumbent should make any off-network solution unattractive.

Few customers can do without access to the public water supply. The service provided to customers comprises three elements:

- an access charge,
- a customer service charge (administration of the account etc),
- a volumetric charge.

The largest single element should be a fixed charge. I therefore conclude that most off-network solutions would not be economically viable if there was a broadly cost-reflective price offered to the customer.

The supplier of last resort service is difficult to price. The first two elements listed above would also apply to a customer who only wanted an on demand supplier of last resort contract. The access charge is likely to be the same whether or not water was supplied. The economic cost of providing the pipe remains approximately the same, as the rate of deterioration of the pipe would be just as quick, if not more so, if no water is being used. The access charge would also cover the costs of the water or sewage treatment capacity reserved for that customer. There may be small savings in customer service if no water is being used, but these are likely to be immaterial. There would, however, be no volumetric charge.

In the event that a customer does want to maintain a supplier of last resort link with the water supplier, but does not require this to be available on demand, then there would be the opportunity to manage capacity in the network and this could reduce the access charge that would be payable. The administration charge however may be higher. Again there would be no volumetric charge.

In each case, correct pricing would require a full understanding of the infrastructure required and the costs associated with making this available to the customer. These costs would have to be calculated in a manner that is sufficiently robust for the customer to understand the costing and its implications. It must also be clear that there can be no question of unfair allocations of costs; if so, this could form the subject of an appeal to the OFT.

My analysis of the impact of competition would change if the incumbent supplier were not close to the efficiency frontier. Reducing cost and maintaining service levels are the critical success factors. Tailored tariff and service packages may mitigate some of the more extreme effects of competition but the underlying root cause is that the customer does not want to pay for an inefficient service.

ii) Harmonisation of charges

Charges are harmonised for domestic and non-domestic customers in each of the three water authority areas. There is a strong case in favour of harmonising charges across Scotland. Most large customers will agree an individual service level agreement with their supplier. They are not likely, therefore, to be affected by the harmonisation of charges.

Any harmonisation of charges will favour some customers at the expense of others. It is, for example, cheaper to supply the city of Dundee than it is to supply a rural area in Perthshire. If the three authorities are merged, it would be inequitable not to harmonise charges (as in electricity or gas) - for example, it costs more to supply North Fife than Dundee, although charges in Dundee are currently higher.

Customers in the different authority areas will see quite different increases in their charges as a result of the move to harmonise charges. Increases for domestic customers in the West of Scotland Water Authority and East of Scotland Water Authority areas will be a little higher than the overall revenue cap.

Table 16 illustrates my estimate of the harmonised charge for domestic customers.

Table 16: Impact of harmonisation

2001-02 Band D charge	East	North	West
Water	£124.50	£192.63	£138.87
Sewerage	£145.50	£157.55	£127.53
Total	£270.00	£350.18	£266.40
2005-06 Band D charge nationally			
Water	c.£160	c.£160	c.£160
Sewerage	c.£183	c.£183	c.£183
Total	c.£343	c.£343	c.£343

In 2005-06 harmonised domestic charges would be approximately £343 per Band D household. This compares to the current Band D charge in the East of Scotland Water Authority of £270.00; in the West of Scotland Water Authority of £266.40; and in the North of Scotland Water Authority of £350.18.

iii) New business

I have reviewed the importance of non-core business activities for the privatised water companies in England. The diversifications made by the companies in England have enjoyed only limited success. Investors now appear to favour companies that are sticking to their core business. I believe that the Scottish industry should avoid the mistakes made by the privatised water industry and that new business opportunities ought to be approached very cautiously. It is important to weigh the potential of any new business activity with the risks both of that venture and the risks posed to the core business. In the public sector model, the financing for any non-core activity, whether a small opportunity or an acquisition, comes from customers of the core business or from the taxpayer. The potential profit from new business is not significant, particularly when compared with the potential gains from achieving my efficiency targets.

I do, however, support the introduction of the general power to enter into commercial relationships. There is a case for providing some limited value added activities to key retail customers, but it is important that the costs of providing these services are well understood. It may be that the available retail margin does not justify this service.

The importance of understanding costs, whether of an additional value added service to a major retail customer or more generally, cannot be overstated. The customer interest would suggest that there should be an accounting separation of the retail, new business and network and treatment activities of the water authority. This will ensure that the costs and benefits to customers are transparent.

i) The broader utilities market

There has been a significant improvement in the value for money offered by the electricity and gas companies in the past ten years. Levels of service have improved significantly and the costs of supply (and therefore prices to customers) have fallen.

Customers have choice and a significant number of households do now switch supplier for better value.

There have been two principal reasons for this improvement. Regulation has encouraged competition and helped force costs down by setting strict caps on revenue. Competition has also been effective in reducing costs and in improving the level of service offered to customers.

There have been a number of quite high profile failures. Independent Energy had to go into receivership because of failings in customer billing and service. The mergers between water and electricity companies appear to have brought at best limited benefits. Scottish Power is in the process of selling Southern Water, and WPD bought the failing Hyder Group, which included SWALEC and Welsh Water.

Effective corporate governance is rarely noticed, but failures become apparent very quickly and often with negative implications for customers (and shareholders). The role of the board is to ensure that the organisation and its management stick to a clear and sensible strategy. The clear lesson from the experience of the utilities in England and Wales is that the boards, either of the proposed Scottish Water or of the existing three authorities, need to have the resources and expertise available in order to be able to challenge management effectively. This will best serve the interests of customers.

Diversification into other businesses also appears to have added limited value to shareholders, and many companies are now looking to divest these activities and return to their core business. The most obvious example of this is Welsh Water. Glas Cymru, a not-for-profit company limited by guarantee, has acquired Welsh Water. Glas Cymru is owned and controlled by members who do not receive dividends or have any other financial interest in the company. The company is 100% debt financed and is, therefore, an interesting comparator for the Scottish water industry.

The proposal to establish this 100% debt funded company was regarded (and by some still is) as quite radical. Many analysts questioned whether the company would be able to raise the necessary debt finance. In the end a range of measures ensured that there was significant demand for the bond issue. These included:

- limiting activity to the core business of water and sewerage in Wales;
- building a reserve of £350 million to protect creditors against any operational shocks;
- sub-contracting operational and customer service activities to United Utilities and to Thames Water.

The issue was 70% over-subscribed.

Glas Cymru owns the assets of Welsh Water, but whilst it has retained the strategic asset management function, it has sub-contracted all other activities. This has increased the proportion of work that is contracted out from 60% before the take-over, to 85%.

These operating contracts will ensure that Welsh Water comfortably beats the efficiency targets set for the current regulatory period by Ofwat.

Analysis of this interesting development suggests that there are three main reasons why Welsh customers will benefit from the new approach.

i) Focus on costs

The reduction in the cost of capital has had a high profile, but just as impressive from a Scottish viewpoint is that the operational costs will be reduced considerably during this regulatory review period. Glas Cymru is also amongst the leaders in pioneering a partnership approach to the delivery of its capital programme. This is likely to generate significant savings.

ii) Focus on core activities

The limit on activities to the core business of providing a water and waste water service within the Welsh Water area ensures that the management is not distracted from the most important issue, which is reducing cost.

iii) Incentive to management

It is clearly in the customer's interest when management is working primarily to deliver the priorities of the customer. The alignment of management bonuses with the promised reductions in bills is a very positive step.

Although the overall model is not appropriate for Scotland, each of these lessons would seem to be relevant in a Scottish context. Whilst it is not possible to talk about reductions in average Scottish Water bills during this regulatory period, even

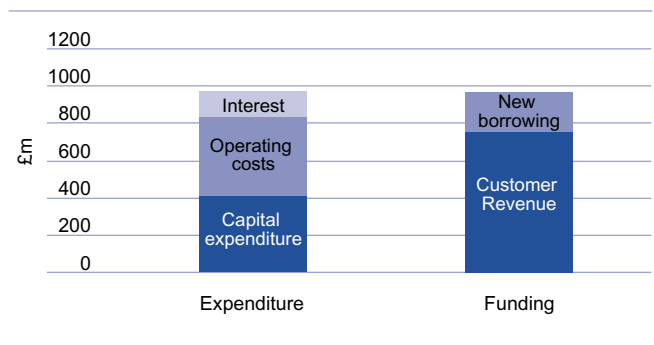
if management meets the targets set in this Review, it may be possible to talk about real reductions in the next regulatory period. It is certainly in the customer's interest that proper incentives are available at all levels within the proposed Scottish Water, or the existing three authorities, in order to ensure that high-quality staff are attracted, retained and rewarded for delivering greater value for money to customers.

j) Cost issues

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, there are no dividends for shareholders from any profit. Any surplus in Scotland can go wholly to financing investment and improving the service to customers. There are no trade-offs between the customer and the shareholder.

There are three principal areas of cost. These are operating costs, capital expenditure and interest costs, and their relative importance is clearly outlined in Figure 4 below⁷.

Figure 4: Scottish water industry expenditure and funding 2000-01



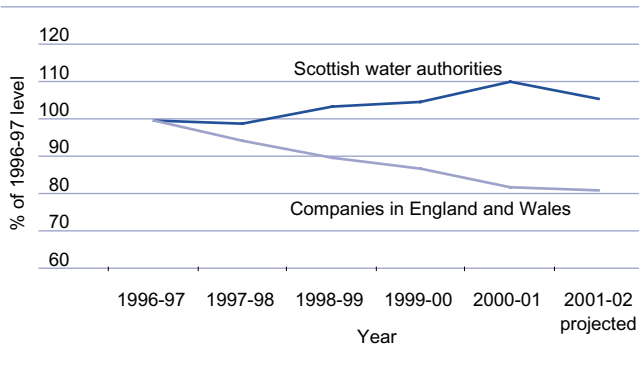
i) Operating cost efficiency

Operating costs currently account for over 40% of the money spent by the water industry in Scotland. I have therefore looked at the relative efficiency of the service in Scotland and concluded that significant improvement is needed. The relative efficiency of the water industry in Scotland had been deteriorating, but there appears to be a not insignificant improvement in the current year.

Figure 5 shows that the underlying real increase in operating costs in Scotland between 1996-97 and 2000-01 is 10%. I have analysed the comparable figures for the companies in England

⁷ Based on 2000-01 water authority audited accounts.

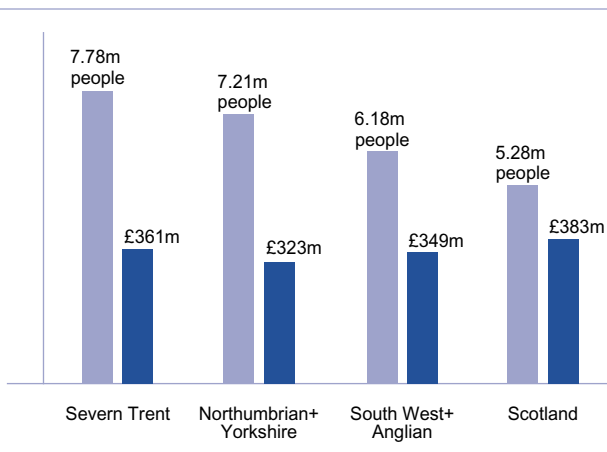
Figure 5: Trends in base operating costs since 1996-97⁸



and Wales and have established that they have reduced costs by 18% on average over the same period. During the current year, I expect there to be a 4% improvement in the efficiency of the Scottish industry. This current progress is to be welcomed and needs to be built upon over the next several years.

The extent of the challenge becomes clearer when we compare the level of operating costs incurred by the water industry in Scotland with the costs incurred by some of the privatised companies in England in supplying other areas.

Figure 6: Comparison of operating expenditure and population served 1999-2000



In order to assess the potential for efficiency, I compare the controllable costs of each of the authorities with the companies

in England and Wales. This comparison is done by means of a series of econometric models, which adjust for differences in the type and quantity of assets that each service provider has. These models allow me to compare a small English water company with a much larger organisation. I also take into account any special factors which the management of the authority can demonstrate are genuinely unique. North of Scotland Water Authority benefited from an adjustment on this basis.

The Office of Water Services (Ofwat), in conjunction with Professor Mark Stewart at the University of Warwick, developed these econometric models. The models were used in the 1994 and 1999 price reviews in England and Wales. They have been held out as an example of good practice by the Cabinet Office and were reviewed by the Competition Commission last year. I have made only marginal adjustments to these models to ensure that they take fully into account the Scottish operating environment.

I use these models to compare the controllable operating costs of the authorities and the companies. These are the costs that management is able to influence in the short to medium term. I do not, therefore, include in my analysis costs such as depreciation, interest and Public Private Partnership (PPP). I also exclude one-off costs (for example the costs of dealing with the millennium bug).

The controllable costs for the three authorities and for Scottish Water are shown in Table 17.

This inefficiency in operating costs is costing domestic customers an average of around £70 per household per year.

Failure to address this inefficiency would have to be paid for by customers. Figure 7 indicates the impact on prices of such a failure.

My efficiency targets in this Review therefore aim to reduce the current operating inefficiency as much as possible. I recognise that this will take time and I have therefore sought to balance the need to minimise customer charges with the desire to set an achievable target.

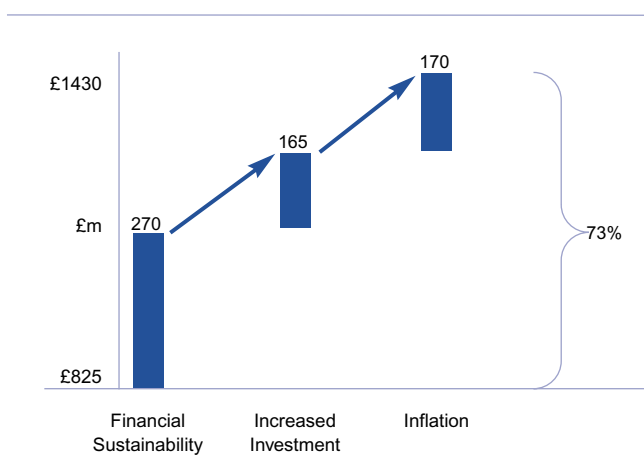
⁸ It is important to note that there have been significant improvements to drinking water quality and environmental compliance during the past five years.

I have reviewed the performance of the privatised companies in England and Wales and have noted that on average they close over 80% of the efficiency gap between themselves and the leader during a regulatory period. I have therefore set my target at a prudent 80% closure of the efficiency gap. I have calculated the gap against the comparator companies. These comparator companies are marginally less efficient than the leading company and this means that my target is a little easier than the mean improvement in relative efficiency that the companies have been able to achieve.

Table 17: Controllable operating costs

	East	North	West	Scottish Water
2000-01 total operating costs	£226.1m	£182.8m	£304.7m	£713.6m
less: depreciation	£50.0m	£45.4m	£66.0m	£161.4m
less: interest	£47.7m	£27.6m	£53.8m	£129.1m
less: PPP	£12.8m	£9.3m	£0.0m	£22.1m
Controllable operating expenditure	£115.6m	£100.5m	£185.0m	£401.0m
less: exceptionals	£9.5m	£0.0m	£0.0m	£9.5m
less: other one-off costs	£4.6m	£8.7m	£12.5m	£25.8m
Underlying controllable operating expenditure	£101.5m	£91.8m	£172.5m	£365.8m
Efficiency gap	47%	41%	47%	44%

Figure 7: Impact on revenue without efficiencies



The comparator companies that I used were Northumbrian Water and Yorkshire Water for East of Scotland Water Authority and West of Scotland Water Authority and Welsh Water and South West Water for the North of Scotland Water Authority. These companies were selected because they displayed similarities in terms of their assets, geographical area and types of property served. The choice of comparator does not, however, materially impact on the calculation of the efficiency gap.

Tables 18 and 19 summarise the operating expenditure efficiency targets for 2002-03 to 2005-06 (in outturn prices).

Table 18: Operating efficiency targets

	2002-03	2003-04	2004-05	2005-06
Scottish Water	£63.0m	£96.9m	£115.9m	£135.8m
East of Scotland Water Authority	£13.1m	£20.2m	£24.2m	£28.3m
North of Scotland Water Authority	£14.9m	£22.9m	£27.4m	£32.1m
West of Scotland Water Authority	£35.0m	£53.9m	£64.4m	£75.4m

Table 19: Operating efficiency targets per household (the amount saved off each year's bill)

	2002-03 £/ household	2003-04 £/ household	2004-05 £/ household	2005-06 £/ household
Scottish Water	£29	£45	£53	£62
East of Scotland Water Authority	£19	£29	£35	£41
North of Scotland Water Authority	£32	£48	£57	£67
West of Scotland Water Authority	£35	£54	£64	£74

The final amount that an authority should be allowed to spend in providing a service to customers also takes account of improvements in the level of service. The Quality and Standards process identified a series of prioritised improvements. This

capital expenditure could have no adverse or even a beneficial impact on operating costs and in others there may be extra costs incurred (for example, first time sewage treatment).

In some cases the econometric models have already taken the improvement into account (for example the models assume that water is treated to the same level in Scotland as in England) and in others extra money needs to be made available. I have reviewed the requests from the authorities for an extra allowance of operating costs. The increments to allow for improvements to levels of service are shown in Table 20.

Table 20: Additional allowance of operating costs to improve service to customers

	2002–03	2003–04	2004–05	2005–06
Scottish Water	£2.47m	£4.56m	£6.76m	£9.02m
East of Scotland Water Authority	£0.83m	£1.69m	£2.60m	£3.55m
North of Scotland Water Authority	£0.86m	£1.28m	£1.71m	£2.14m
West of Scotland Water Authority	£0.78m	£1.58m	£2.44m	£3.33m

ii) Capital expenditure efficiency

I have based my capital efficiency target on both quantitative and qualitative evidence. I have consulted with a range of asset-intensive organisations. This provided an insight into their achievement of capital efficiency. Their experience confirmed the importance of a strategic approach, excellent procurement and good quality asset information.

My review of Ofwat's publications suggested that there has been significant progress by the privatised companies in delivering capital efficiency. Moreover, it is clear from the price limits that were agreed for the current regulatory period that the companies recognise that there is considerable further scope for efficiency.

I was able to use a methodology developed by Ofwat to compare the costs of standardised projects. This allows me to

compare the effectiveness of the procurement of capital projects. I have compared the costs for each of the standard projects submitted by the authorities with the information provided by the companies in England and Wales to Ofwat.

Table 21 summarises the percentage gaps between the authorities in 2000-01 compared with the Ofwat benchmarks published in 1999.

Table 21: Gap in procurement for water authorities 2000–01 compared with Ofwat benchmarks 1998

	East	North	West
Water infrastructure	18.4%	23.3%	21.2%
Waste water infrastructure	16.6%	13.8%	11.9%
Water non-infrastructure	0.2%	3.6%	10.7%
Waste water non-infrastructure	19.4%	17.0%	15.7%
Overall %	13.4%	14.7%	14.1%

In order to set a target for procurement, I had to estimate the likely improvement in the performance of the companies south of the border between 1998 and 2005. The evidence would suggest that the companies are reducing their costs for standard projects by around 2.5% annually in cash terms. This would suggest that the gaps would grow to around 29% by 2005-06, if the authorities made no progress from their current position.

Table 22: Projected gap in procurement compared with Ofwat benchmarks as at 2005–06

	East	North	West
Water infrastructure	32.6%	36.7%	35.0%
Waste water infrastructure	31.2%	29.0%	27.3%
Water non-infrastructure	17.6%	20.4%	26.3%
Waste water non-infrastructure	33.5%	31.5%	30.4%
Overall %	28.5%	29.6%	29.1%

The benchmark cost used by Ofwat is not the lowest submitted cost. The efficiency gap in procurement to the best standard is therefore greater than illustrated in Table 22.

Procurement is only one element of the potential for capital efficiency. I have therefore sought to understand the scope for efficiency in the other areas of the asset life cycle. This includes asset strategy, design and planning and capital programme management.

In 1999, Ofwat set price limits for the companies, which assumed that the costs of delivering the capital programme would be 26% lower than the estimate provided in the companies' business plans. The estimates in the business plans were consistent with the cost base analysis. In order to assess the scope for efficiency

in the other areas of the asset life cycle, I assumed that the companies continue to improve their procurement at the same rate as in the previous ten years. I further assumed that there was no efficiency gap between the Scottish industry and the industry south of the border at that time.

Tables 23 and Table 24 summarise the total assessed gap:

I have taken a prudent approach to the setting of targets. My target for capital investment efficiency is 34% for each authority. This is 80% of the assessed efficiency gap. I have phased this target over the full four years. In contrast, Ofwat assumes that the entire capital efficiency gap is closed in the first year after the regulatory review¹⁵.

Table 23: Analysis of total assessed efficiency gap

Period	Saving
1990-95	11.9% ⁹
1995-00	
Total achieved efficiency	13% ¹⁰
Procurement efficiency	9.2% ¹¹
Asset management saving	4.2%
Delayed element of capital programme	2.1%
Planned spending not required	2.1%
Actual efficiency	11.1%
2000-05	
Total reductions agreed from Business Plans estimates of which:	25.8% ¹²
Estimated procurement efficiency	11.9%
Asset management saving including innovation ¹³	15.8%
Total assessed efficiency gap	41.9% ¹⁴
Of which: potential procurement saving	29.5%

Table 24: Summary of total assessed efficiency gap by efficiency area

Area identified for efficiency	Comments	Efficiency gap (multiplicative)
Strategic asset management	No allowance for out-performance by the privatised companies, or for efficiency gains after current Price Review, in 2005-06.	12.7%
Programme planning (appraisal)		
Procurement	Comparison against Ofwat benchmark, not lowest submission.	29.5%
Innovation	An estimate as some of the potential innovation saving is reflected in the procurement saving.	5.5%
Cumulative gap		41.9%

⁹ Assumes that the gap in cost base efficiency has built up since 1990, and the companies in England and Wales have improved at the rate of 2.5% nominal per annum.

¹⁰ Refer to Chapter 19, c, iii.

¹¹ Assumes companies are 20% more efficient by 2000, consistent with a continued improvement of 2.5% per annum.

¹² *Ofwat 1999 Periodic Review: Final Determinations*, section 7.3.1, Table 21a and Table 21b: combined reductions in enhancement and maintenance of 25.8%.

¹³ Asset management saving = Total saving – Estimated Procurement Efficiency
 $(1-25.8\%) = (1-Y\%) \times (1-11.9\%) = (1-Y\%) \times 88.1\%$
 $1-Y\% = 74.2\% \div 88.1\%$
 $Y\% = 1 - (74.2\% \div 88.1\%) = 15.8\%$

¹⁴ Total assessed efficiency gap is calculated by a multiplicative calculation of the actual efficiency attainments between 1990-95, 1995-2000 and 2000-05 i.e. $[1 - (1 - 11.9\%) \times (1 - 11.1\%) \times (1 - 25.8\%)]$

¹⁵ *Ofwat 1999 Periodic Review: Final Determinations*, pages 96 and 98.

Table 25: 2005–06 Capital efficiency target

Cumulative gap	42%
Actual target (80% of gap)	34%

Adjustment to Quality and Standards investment levels

My targets will reduce the total capital spending in Scotland from £2.3 billion over the four years to £1.7 billion. This represents a total efficiency of £0.6 billion, or a reduction of nearly £150 in the total amount paid by the average domestic customer over the regulatory period.

Figure 8: West of Scotland Water Authority post-efficiency investment profile

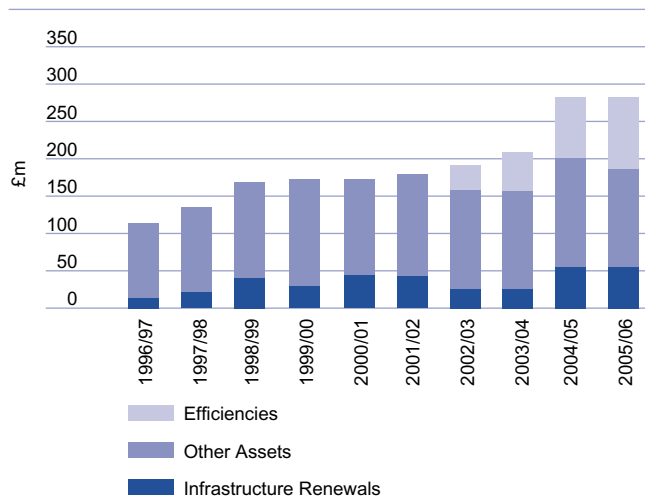


Figure 9: North of Scotland Water Authority post-efficiency investment profile

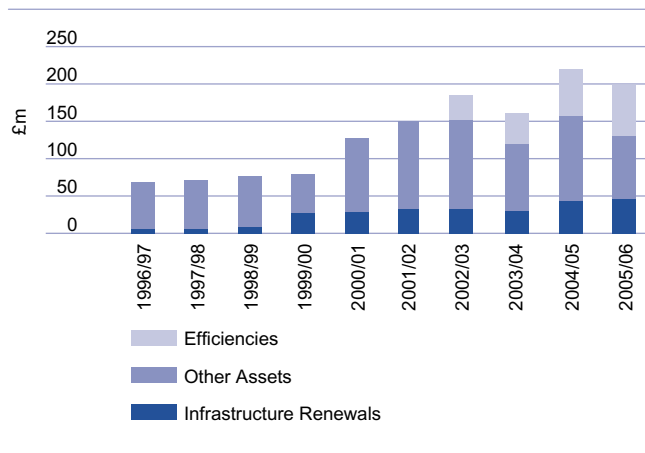
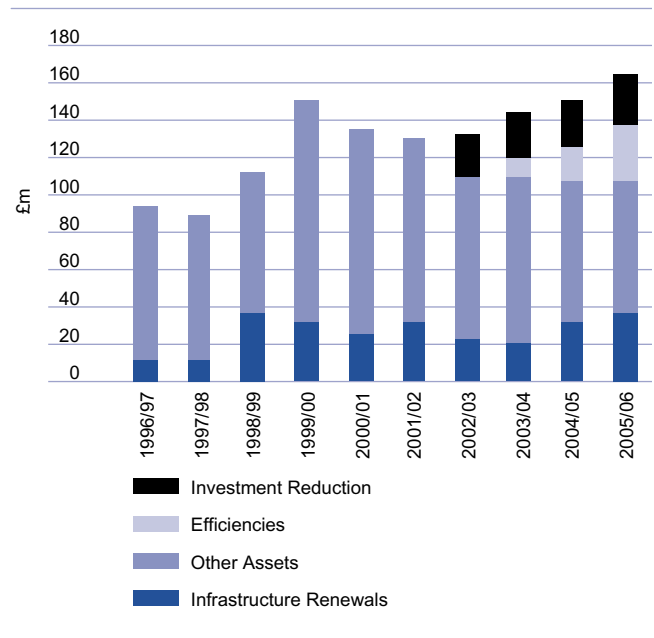


Figure 10: East of Scotland Water Authority post-efficiency investment profile



The phasing of the total capital programme for each authority is as shown in Figures 8 to 10.

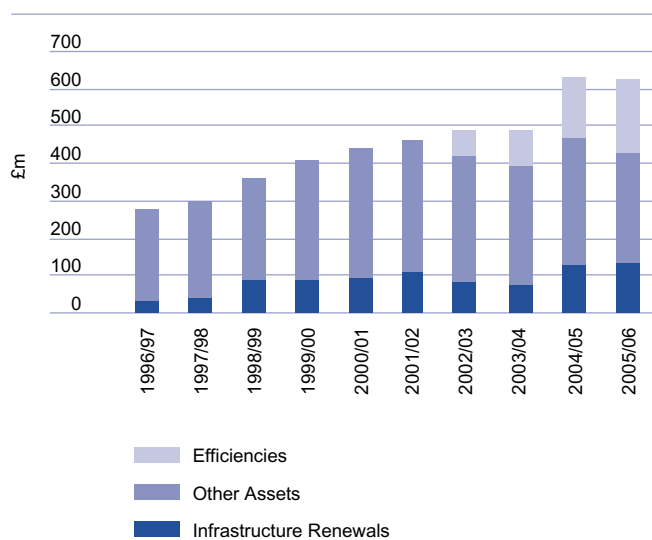
My targets for the East of Scotland Water Authority are slightly different. I have taken into account its voluntary reduction in its investment programme during the Quality and Standards process. The impact of this is illustrated by the investment reduction element in Figure 10. If I add back this voluntary reduction, the East of Scotland Water Authority efficiency target is fully consistent with the other two authorities.

Even with these capital efficiency targets, the industry will spend approximately £750 per household in Scotland between 2002 and 2006. Total investment in cash terms will have increased by over 50% on the level in 1996-97, and by 120% in terms of level of service impact.

iii) Potential for merger efficiencies

My view is that the merger of the three authorities is clearly in customers' interests. One reason is that the creation of Scottish Water should allow customers in Scotland to benefit from some quite considerable economies of scale.

Figure 11: Scotland post-efficiency investment profile



I have assessed the potential for efficiencies in three ways, namely:

- econometrics,
- bottom-up analysis,
- comparison with other public and private sector mergers.

I have asked management to achieve 80% of the potential efficiencies by the end of this regulatory period in 2005-06. For convenience I have also added my assessment of the scope for property disposals as a result of the merger and the general efficiency programme to this target.

In assessing the savings that result from a merger, it is important to avoid counting savings that would have been achieved even had the merger not taken place. I have therefore only looked at the potential of the merger after assuming that all costs have already been reduced by 35%.

Table 26: Potential merger efficiencies

Merger potential	TOTAL
Reported operating costs 2000-01 (total of the three authorities)	£451.8m
Costs after 35% efficiencies	£293.7m
Merger savings (11% of efficient cost)	£32.3m
Costs after all savings	£261.4m

The econometric analysis suggested that an 11% saving could be achieved. This is illustrated in Table 26.

This £32.3 million increases to £36.6 million for 2005-06, after inflation.

My bottom-up analysis assessed each of the individual cost components of a head office and the support services that are essential to any water business. My analysis assumed that the post merger head office would be approximately half the size of the sum of the existing three head offices post efficiency. This analysis suggested that the potential merger savings were in the range £45 to £51 million.

Review of mergers in the public and private sectors showed that a reduction in costs of at least 5% was consistently achieved. This would suggest that the potential for merger savings was £52 million.

I have separately estimated asset sales at just under £10 million per year.

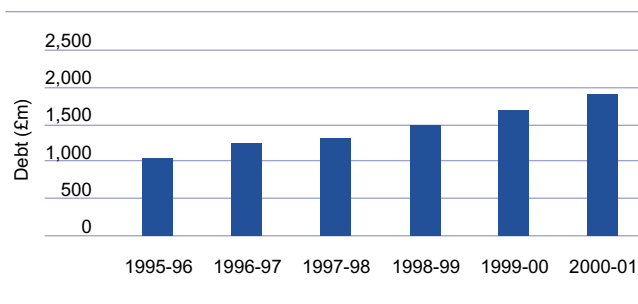
My analysis has therefore given me a range of potential savings from the merger of between £36.6 million and £52 million. I have asked the industry to deliver 80% of the lower number by 2005-06, i.e. £29.3 million.

iv) Debt

The water industry in Scotland has been living beyond its means for many years. This has manifested itself in the under-investment described above, and in a growing debt burden.

Debt has increased markedly in the last four years:

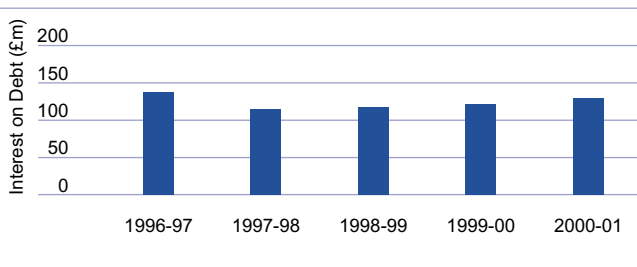
Figure 12: Scottish water authorities' debt



As a result, customers have been paying more and more in interest charges¹⁶.

¹⁶ The level of interest payments has remained broadly constant as a result of the maturing of expensive embedded debt and its replacement by new lower coupon debt.

Figure 13: Interest payable by Scottish water authorities



Every organisation has to have sufficient income in the long run to cover its outgoings. It is not possible to continue to borrow even a little more each year. If there is not a realistic chance that borrowing will some day be repaid, then the new borrowing becomes a de facto subsidy. Ultimately, this extra borrowing (or subsidy) has to come from public expenditure. This extra money can only be found by reduced budgets for some other public services or by extra taxes. It is too simplistic to say that this would keep water charges down in the short run and that this would benefit the vulnerable. The impact on any individual would depend upon the tax that they pay and the reliance that they place on public services.

My analysis has suggested that a free cash flow to interest payable ratio of about 1.5 is sustainable in the medium to long term. This is sufficient to ensure that if there is a need to borrow to meet tight deadlines on an environmental programme or to tackle an operational problem, there will be borrowing capacity available. Furthermore, this ensures that any immediate impact on customer charges can be minimised. This ratio is broadly in line with Glas Cymru, the debt funded not-for-profit company that has acquired the assets of Welsh Water.

The current ratio of free cash flow to interest is shown in Table 27.

Table 27: Free cash flow cover of interest 2002–06

Free cash flow cover of interest	2002–03	2003–04	2004–05	2005–06
	0.0	0.3	0.7	1.0

Effective treasury management is important in any organisation. This ensures proper management of cash and debt requirements. It is relatively straightforward in a regulated water business. There is no need for some of the more complex treasury activities such as currency hedging, interest rates swaps or limiting of transaction risk. Moreover, income from customers is, relative to most businesses, highly predictable.

I have established from the information provided to me in responses to my regulatory returns that the water authorities could improve their treasury management. My recommendations on revenue caps take account of the savings that would result from better treasury management.

v) ‘Spend to Save’

I recognise that there are savings (such as exiting a lease) where there will be an upfront cost, but where there will also be an immediate benefit. I have set out to ensure that resources are made available to the management of the industry to help them deliver my efficiency targets. In total I have allocated £200 million of public expenditure over the first three years of the Review period for Spend to Save outgoings. This allowance more than offsets the operating cost efficiency target in each of the first two years.

Table 28: Spend to Save

Years	2002–03	2003–04	2004–05	2005–06	Total
Operational costs	£40.0m	£85.0m	£25.0m	£0m	£150.0m
Capital investment	£15.0m	£35.0m	£0m	£0m	£50.0m
Total Spend to Save	£55.0m	£120.0m	£25.0m	£0m	£200.0m

In the event that Parliament does not approve the proposed Scottish Water, I have included within the price limits of each of the three authorities a proportion of the total in line with their share of the total number of properties supplied.

vi) Public Private Partnerships

I have analysed the use of PPP projects. I concluded that PPP seems to have offered reasonable value for money for customers. My analysis suggests that the major benefit of PPP is the innovation in solutions and service delivery that appear to result. It will be vital, however, that the water authority holds the contractor to account for the service provided. The customer is less interested in the means by which a service is delivered than in the fact that the service is delivered to an appropriate standard.

It is clear that the management of the authorities can learn from PPP, particularly in terms of whole life investment appraisal and management. PPP may have application in other areas, but the value for money test must be rigorously and appropriately applied.

k) Customer issues

i) Consultation

I have consulted extensively with customers over the past two years. I have arranged various public meetings with my Consultative Committees, and have met with representative groups and large customers. I have also worked with groups on specific issues of concern such as the affordability of charges.

My public meetings provide useful first-hand contact with customers. I have held over 33 of these meetings throughout Scotland, from Greta to Wick. We have also visited Shetland, the Western Isles and Mull. Most of the issues raised are broadly similar to the concerns of customers who contact my office with complaints.

I set up a Large User Group in May 2000. The members of the group come from all three authority areas. The group comprises a mix of organisations, including both the public and private sector. This Large User Group has been invaluable in helping me to understand the concerns of large users of water. Their experience has enabled my analysis of the scope for improvement in customer service to the large organisations. My discussions with these customers have also informed my views on competition and the need for broadly cost-reflective tariffs.

I have also met with a number of representative organisations and trade associations, covering a range of industrial and rural interests. Their input on the service priorities of customers has been most informative.

I established the Water Panel in order to get a more quantitative picture of the priorities of customers. An independent market research company manages this panel and compiles the questions in consultation with my office, the Scottish Executive and the three Scottish water authorities. The views expressed by this panel have been important to me in completing this Review. Their views appear to be broadly similar to those expressed in public meetings and in other consultations.

ii) Domestic customer service

There is only a relatively small number of people who have cause to complain about their water and sewerage service. However, when they do have cause for complaint, the

consequences of service failure have often been unpleasant and sometimes very serious. I have found during my meetings with customers that there is an increasing desire for a choice in supplier and that an increasing number of customers are comparing the service they receive with other utilities such as electricity, gas or telephone.

Current situation

From their concerns expressed at public meetings, customers appear to have three main priorities. These are customer service, environmental issues and charging. Environmental issues and charges are analysed separately.

In one of my first public meetings, a customer highlighted the difference between the guaranteed service standards offered in England and Wales and those offered in Scotland. Improved standards have now been introduced in Scotland, providing all customers with guaranteed compensation if standards are not reached.

These standards are as follows:

- 48 hours notice of a planned interruption to your water supply likely to last more than four hours.
- Restoration of supply at stated time following planned interruption of water supply.
- Restoration of supply within 12 hours of an unplanned interruption (48 hours for a trunk main interruption).
- Following sewer flooding in your home or business premises - clean up the mess and refund your full annual sewerage charge for each incident (up to £1,000) (for business customers this excludes any trade effluent charges).
- Respond fully in writing to a written complaint within 10 working days.
- Respond fully to a telephone complaint where a written response is requested within 10 working days.
- Respond to request to change your payment method within 5 working days (where direct billed only).
- Respond to other billing queries within 10 working days (where direct billed only).
- Keep appointments made for a morning or afternoon and offer a two-hour time band if requested.

The regulatory system ensures that customers will receive a £20 compensation payment (except in the case of sewer flooding) in the event that any of these standards are breached.

I have introduced regular audits of complaint handling within the authorities. These audits can be of a general or more specific nature. It is pleasing that there has been an improvement in performance over the past year - but there is some way to go before the authorities reach acceptable levels of compliance. My price limits are set in an expectation that there will be a further marked improvement in customer service.

I have agreed a clear Major Incident Policy with the water authorities. This Policy is a major advance in customer service. The Policy sets out guidelines of what a major incident is, what to expect if it occurs, and what compensation may be payable.

The guidelines that trigger a major incident are as follows:

- An incident which affects more than 2,500 properties at any one time for at least 24 hours continuously (water related); or affects 100 properties (sewer flooding incident).
- An incident which affects the supply of water to premises through either an interruption to supply or restriction to the normal use of water because of poor quality or contamination.
- An incident to which the Scottish Executive requires a special response.

Future priorities

There are three main priorities for the work of my office in improving the service offered to domestic customers. These are the creation of a priority register for vulnerable customers, the introduction of a guaranteed standard for water pressure, and a new standard on water ingress to gas mains.

Currently, the water authorities identify at risk customers through close liaison with local authorities and health boards. A priority register is a simple idea, but one which could further benefit vulnerable customers. The register would include customers who are in need of special assistance in certain circumstances. The register could therefore cover customers with a medical condition, a disability, or simply those who may

need a little extra support if their water supply is to be interrupted. My office plans to work with the water industry and with other utilities in Scotland to establish this register. If it is not possible to reach a joint arrangement with the other utilities, I will look to the water industry in Scotland to begin to offer this improvement in service to their customers.

Fortunately the ingress of water into gas mains is very rare. However, the consequences are severe, in that it can ruin gas appliances within an affected property. I have worked with the authorities, Transco and Energywatch to establish an appropriate standard. As a result, a customer who experiences this problem can be confident that the problem will be resolved quickly and appropriately. This standard will be included in future industry Codes of Practice.

I believe that a guaranteed standard for water pressure is desirable. My intention is to work with the industry to introduce an appropriate standard before the end of the current financial year. The proposed revenue caps assume the introduction of a pressure standard.

iii) Non-domestic customer service

My consultations with the non-domestic sector - whether through trade associations or directly with customers - have brought home the need for an improved level of service for this sector. The most frequently mentioned problem is the accuracy and clarity of billing. I will continue to monitor this issue with audits of billing complaints.

My original intention was to introduce minimum standards for the largest non-domestic customers, but in consultation with my Large User Group, it became clear that their primary concern was for a tailored service. No set of standards would be universally appropriate. For many large customers, the service provided and water authorities' responsiveness to their needs seemed to be as important as the absolute price charged.

I have encouraged the authorities to develop a closer relationship with their key non-domestic customers. This is, however, still at an early stage of development in Scotland. I believe that the introduction of key account management will improve the management's understanding of, and responses to, the concerns of their non-domestic customers.

iv) Further improvement required

There has been a significant improvement in the level of customer service offered to customers by the water industry in the last few years. The progress made by the authorities has to continue and, in particular, compliance with the minimum guaranteed standards has to improve. There is also a need to improve the overall quality of service offered to customers.

Improved customer service is likely to be a key factor in improving the competitive position of the public sector supplier if and when retail competition for water services develops. If the water authorities are to be successful in the retail of water services, they will have to listen to the opinions of all of their customers.

My office will continue to monitor the level of service available to all customers. I believe that I have the tools in place to monitor performance and to continue to understand their priorities. My monitoring of complaints and consultation with customers will help me work with the industry to improve the levels of service. Customers should be fully aware of the performance of the water industry against its customer service guarantees. I therefore propose to publish an annual report on the customer service performance of the Scottish water industry.

v) Bad debt and affordability

The scale of the bad debt problem within Scotland is significant and, as highlighted by the Transport and Environment Committee, needs to be addressed. The following table outlines the impact of this debt on the average customer in each of the three authorities.

Table 29: Impact of bad debt on average domestic customer

	East	North	West	Scotland
Average household bill 2000-01	£192	£227	£180	£194
Increase in average household bill that results from non-payment	£11	£4	£17	£12

Collection rates in Scotland are also substantially worse than those in England and Wales.

Table 30: English & Welsh water companies' bad debt levels – 1999-2000

	Total Bad debt	Turnover	Total bad debt as %	WIC estimate – domestic bad debt as of % turnover
Anglian Water	£8.7m	£752.4m	1.15%	0.77%
(Dŵr Cymru) Welsh Water	£10.0m	£486.7m	2.05%	1.36%
North West Water	£26.1m	£1035.3m	2.52%	1.68%
Northumbrian Water	£3.8m	£490.9m	0.78%	0.52%
Severn Trent Water	£18.4m	£1011.0m	1.82%	1.21%
South West Water	£3.7m	£282.8m	1.30%	0.87%
Southern Water	£6.3m	£478.8m	1.32%	0.88%
Thames Water	£19.0m	£1135.2m	1.67%	1.11%
Wessex Water	£2.8m	£285.0m	0.98%	0.65%
Yorkshire Water	£6.1m	£642.9m	0.95%	0.63%

As noted previously, non-domestic customers are critical of the quality of the billing by the water authorities. There can also be no question that the average time taken by both East of Scotland Water Authority and West of Scotland Water Authority to collect the charges owed by the non-domestic sector is poor. Better billing and more communication with customers would improve both the rate of collection and the time taken to collect.

I have analysed non-payment in England and Wales and have not found any strong correlation between the level of charges or the relative level of prosperity in an area, and the level of non-payment. Yorkshire Water and Northumbrian Water both have very high collection rates. So too does South West Water, which has very high charges. The picture in Scotland is not dissimilar in that collection rates in the North of Scotland Water Authority are much better than in the West area, which has the much lower charge.

My analysis suggests that collection rates could be improved if the industry in Scotland, working with local authorities, emulated the companies in England and Wales and introduced a range of measures to make bills easier to pay and more affordable to customers. Such measures include:

- more payment options,
- more locations where bills can be paid,
- debt counselling.

Other utilities have also made efforts to support those who have difficulty paying.

I have noted the criticisms that have been made of the affordability initiative introduced by the Scottish Executive.

The principal aim of the current affordability scheme is to provide some transitional assistance to those who had faced the largest increase in charges. This has been achieved, and the water and sewerage charges paid by some of the most vulnerable customers in Scotland were reduced. In particular, it has helped those in the North of Scotland, where charges are higher. Although the current scheme does not specifically target the least well off, it does provide a breathing space during which a strategic approach to non-payment of water charges can be implemented.

There has been no similar initiative in England and Wales, but there is not the same problem with non-payment. The issue of affordability requires further study as the current collection rate is not sustainable. This would increase the vulnerability of the Scottish industry to retail competition.

vi) Reliefs

The impending withdrawal of reliefs to charities has proved a particularly contentious issue. Relief of charges has historically been funded through higher charges to other customers, including low-income households.

There are no precedents from England and Wales. Reliefs were not inherited by the privatised water companies from their authority predecessors and no other utilities provide such reliefs.

Water authorities estimate the total cost of reliefs for the period 2001-02 at £11.2 million. This relief adds £3 to the average domestic bill in Scotland.

My office has consulted extensively with both domestic and non-domestic customers. They expressed more support for pensioners and low-income households receiving discounted water supplies than they did for charities.

There may well be a strong case for reliefs and I understand that this has been thoroughly examined by both the Transport and Environment Committee and the Scottish Charity Law Commission. It is ultimately for the Scottish Parliament and the Scottish Executive to take a decision on the issue of reliefs. It should not be a matter for the water authority or their regulator, because relief, if it is to be given, should not be funded by customers' charges.

i) Issues for the Scottish Executive

There are two issues where action by the Scottish Executive would be in the general customer interest. These are accounting separation of activities and further strengthening corporate governance.

Most customers seem to be keen to keep the water industry in Scotland in the public sector; however, they are also keen that it delivers clear value for money. I mentioned earlier the importance of good quality corporate governance to the success of a business, and it is no less important in the public sector. My efficiency targets are challenging, but if the public sector water industry adopts the highest standards of corporate governance, these targets can be achieved. I believe that appropriate steps would include the following.

- Well-defined responsibilities for the Scottish Executive's de facto ownership role, the board and the senior management, ensuring that accountability of each party is rigorous and transparent.
- High-quality, commercially experienced non-executive board members who will bring openness, thoroughness and objectivity but also be able to question and advise senior management when necessary about the operation of the business.
- The right balance of executive and non-executive directors. The boards are crucial in supervising the drive for efficiency.
- Transparent and appropriate incentives and penalties for executive board members and for senior management to ensure the right calibre of professionals is attracted to the industry.

- Clear setting of the risk profile by the owner, followed by management of risks by the board to the criteria established by the owner.

These measures are no more than potential competitors already enjoy. The provisions of the Water Industry Bill, and the approach they reflect, go a long way to addressing these issues.

Local accountability is also important. I believe that this can be better achieved by a genuine effort by water authorities to listen to their customers. This accountability could be achieved by the following:

- A full and transparent programme of customer consultation by the authorities or the proposed Scottish Water, the results of which and any subsequent actions are made public, for example, on the authority's web site.
- Development of the current programme of public board meetings, treatment works open days, school and community visits.

I also believe that the current system of my Consultative Committees should be strengthened and extended to ensure that customers' views are passed back to me and to the water authorities and reflected in the development of service levels. I therefore welcome the Water Industry Bill's provisions for Customer Panels.

The second important issue for the Scottish Executive is the importance of allocating costs accurately to the various activities of the water authority. This can be made more defensible by introducing an accounting separation of these activities.

The accurate allocation of costs is critical for two reasons:

- It will help management identify areas of relative inefficiency.
- It will help management justify their decisions in a competitive environment.

There is considerable evidence that accounting separation has ensured better value for money for customers. The experience of the gas and electricity industries is a useful example.

The clearer the 'rules of the game', the more likely that choice will be offered to customers. It is interesting that more choice has developed for customers in the electricity and gas markets (which have embraced accounting separation) than in the telecommunications market (which has not). Accounting separation also reduces the opportunities for 'gaming' of the regulatory regime by management. This is clearly in the interests of customers, because there will be less opportunity for the management to retain value (e.g. an easier life) at the expense of the customer.

This does not necessitate a full legal separation of activities, as it is certainly possible to have an accounting split within a single organisation. This could, for example, be the result of a licence condition or an instruction by the owner. I believe that the Scottish Executive could improve value for money for customers by introducing this requirement.

m) Outlook for the next Review period

My Review and the analysis underlying it have demonstrated that there could be serious implications for charge payers throughout Scotland if the Scottish Parliament does not decide to approve the establishment of Scottish Water. The consequences for charge payers in the North of Scotland Water Authority area are especially serious. However, customers of the East of Scotland Water Authority and of the West of Scotland Water Authority will also end up paying more than would otherwise have been necessary. I estimate that bills in the East and West would be 32% and 46% higher respectively by 2005-06. Bills in the North would be 34% higher.

I am more optimistic about the prospects for prices in the period from 2006 to 2010. I would expect that it should be possible to reduce Scottish Water charges in real terms during this period - perhaps by as much as RPI-3.5% annually. There is a chance that the outlook would also have improved for the three authorities if they were to continue to operate. However, there does remain a significant chance that a further increase in tariffs would be required in the three authority scenario even after this Review period. Apart from changes in environmental or public health standards, the outlook for prices in the existing three authority model would depend entirely on the individual authority's performance against its efficiency targets. There is, however, little question that charges in Scotland would be the highest in the UK.

n) Public expenditure

The commissioning letter for my Strategic Review of Charges contained instructions on the public expenditure that was likely to be available for the water industry in Scotland. Under resource accounting, the public expenditure measures the excess of investment over the operating profit of the industry. Ultimately this limits the amount of new borrowing that is available to the water authorities. The limits are set out in Table 31.

Table 31: Annual limits on public expenditure

	2001–02	2002–03	2003–04	2004–05	2005–06
Scottish Water	£302.30m	£314.30m	£299.70m	£299.70m	£299.70m
East	£83.80m	£87.10m	£83.10m	£83.10m	£83.10m
North	£112.10m	£116.55m	£111.14m	£111.14m	£111.14m
West	£106.40m	£110.60m	£105.50m	£105.50m	£105.50m

I was asked to conduct a Review both on the basis that the Scottish Parliament decides to establish Scottish Water and also on the basis that the existing three authorities continue to operate.

I did not find that the public expenditure limits were a significant constraint in completing my recommendations on the revenue caps for the proposed Scottish Water.

I was asked to use the same split of public expenditure between the three authorities for the next Review period as had existed in the previous two years. My analysis showed that this would lead to even more unacceptable prices for customers of the North of Scotland Water Authority. Sensitivity analysis demonstrated that I could reduce the impact on charge payers in the North of Scotland Water Authority by switching some public expenditure from East of Scotland Water Authority to the North of Scotland Water Authority. The analysis also showed that the charges in the West of Scotland Water Authority would be more acceptable if some public expenditure from the East of Scotland Water Authority was also switched to it. I therefore recommend to the Minister that he approve these switches if the three authorities are to continue to operate.

I have assessed revenue caps for the three authorities under the historic allocation of public expenditure (RAB A) and my proposed allocation. I have also conducted a formal risk analysis for each option. My revised allocation (RAB B) increases the likelihood that all three authorities will remain within their public expenditure limits, but these limits are much

more likely to be breached under the three authority model than under the proposed Scottish Water option.

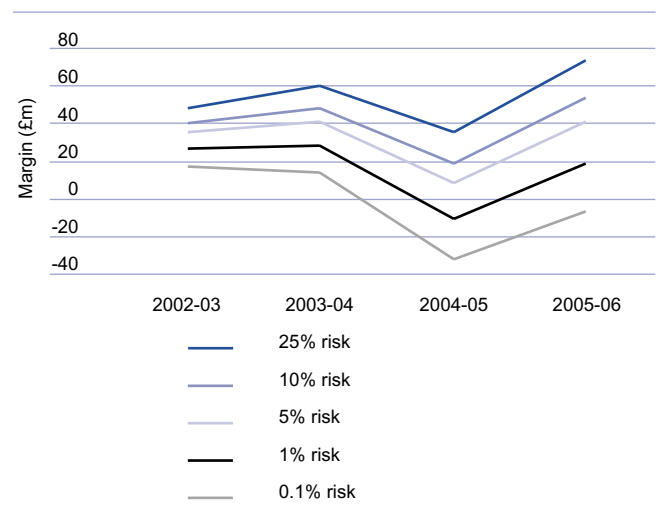
I used three different scenarios for the performance of the proposed Scottish Water. My pessimistic Scenario A describes a range of outcomes from achievement of my efficiency targets at best to a further worsening in relative efficiency.

Scenario B projects a range of outcomes that are consistent with Scottish Water achieving a relative efficiency performance somewhere between that achieved by the leading company Wessex Water and Welsh Water (the worst performing company) in 1998-99.

Scenario C models the most optimistic outcome. This scenario assumes that Scottish Water can use market testing and partnerships with suppliers and employees to achieve frontier levels of efficiency.

I considered a single Scenario D that would cover the likely outcomes for the existing authorities. This includes both possible achievement of my targets and a further increase in relative inefficiency.

Figure 14: Minimum projected margin on public expenditure (£m) operating expenditure and capital expenditure – dependent. Scotland Scenario B



Each of my scenarios took the form of a normal distribution. Figures 14-20 indicate the likelihood that the public expenditure limit could be breached.

Figure 15: Minimum projected margin on public expenditure (RAB A) operating and capital cost efficiencies – dependent. East Scenario D

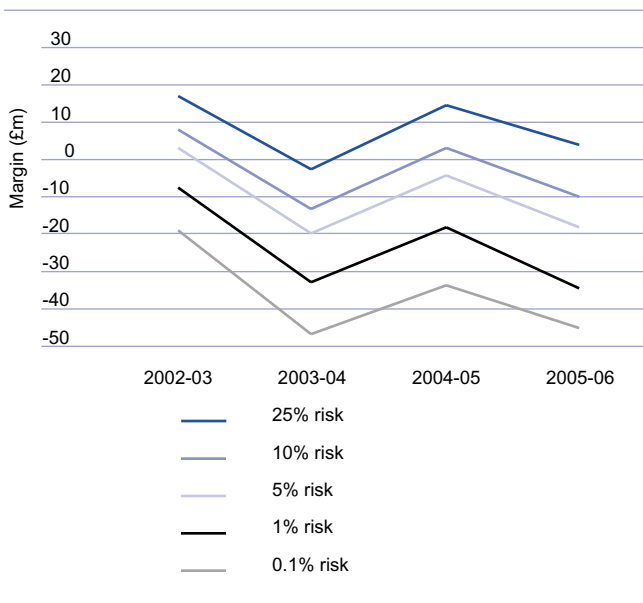


Figure 17: Minimum projected margin on public expenditure (RAB A) operating & capital cost efficiencies – dependent. North Scenario D

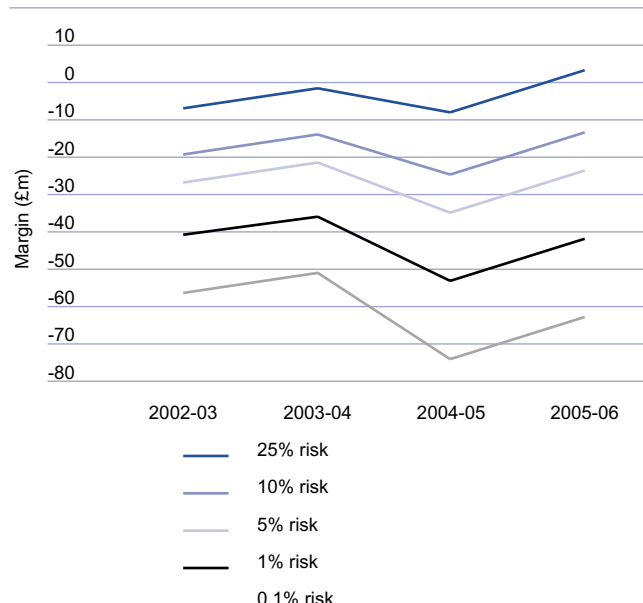


Figure 16: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. East Scenario D

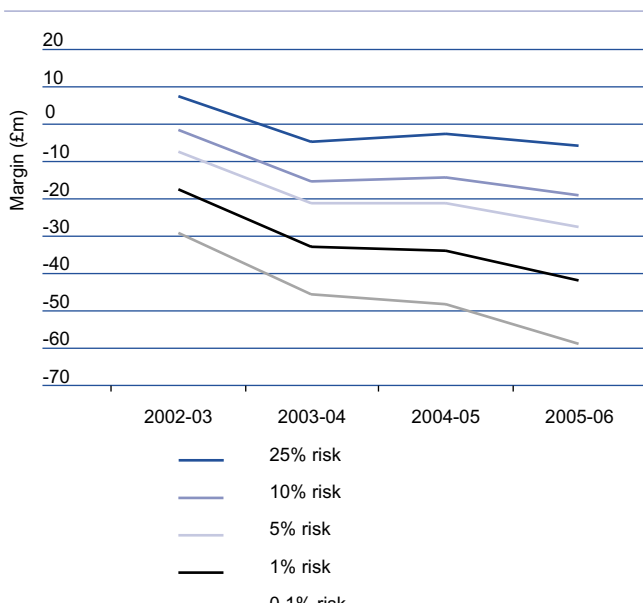


Figure 18: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. North Scenario D

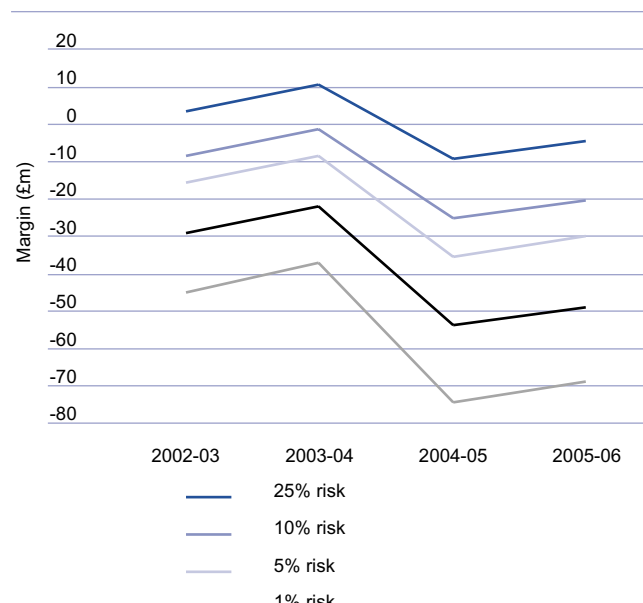


Figure 19: Minimum projected margin on public expenditure (RAB A) operating & capital cost efficiencies – dependent. West Scenario D

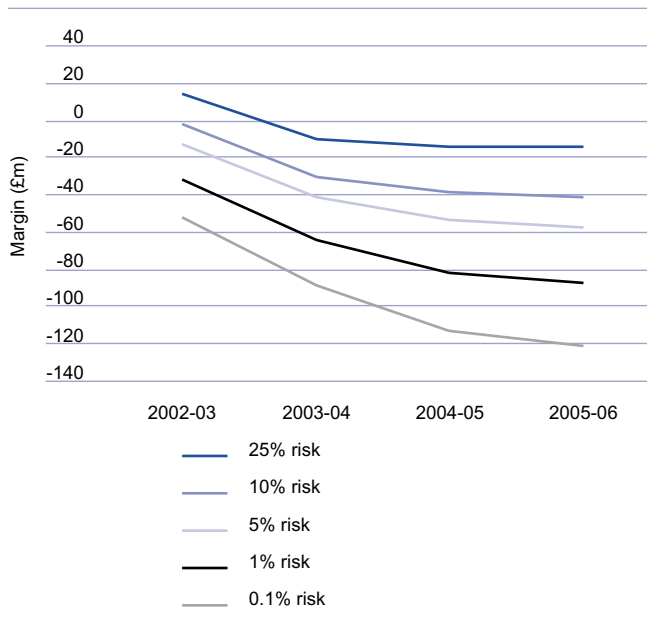
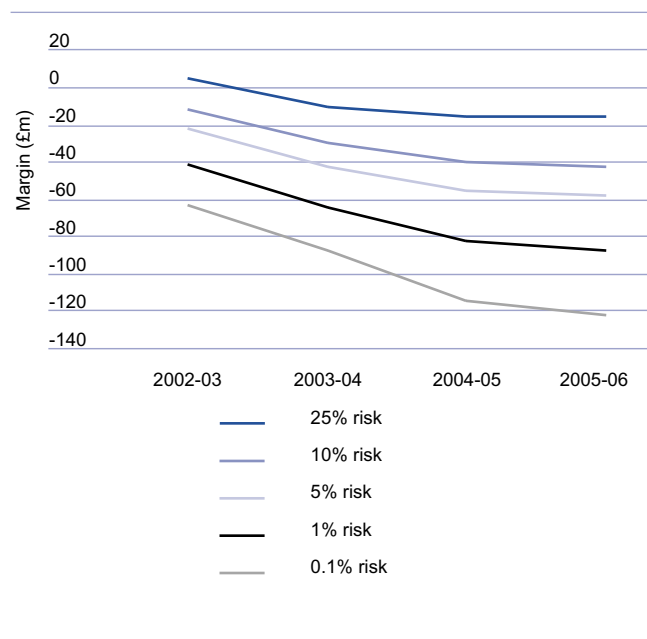


Figure 20: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. West Scenario D



Benefits that would come from the initiative to create Scottish Water include not only better prices for customers, but also a greater certainty that the public expenditure limit will not be breached.

o) Conclusion

My Review has analysed the competitive, customer and cost issues facing the Scottish water industry. I have concluded that the key issue is the relative cost position of the water supplier(s) in Scotland. There is likely to be retail competition for water services during the period covered by this Review, but I am confident that the Scottish water industry can respond effectively to this. Doing so will require the rigorous pursuit of efficiency and the development of broadly cost-reflective tariffs.

Customer service also needs to improve. The next year will see the introduction of a pressure standard and a priority register. I trust that the industry will also continue to improve its performance against the other minimum guaranteed standards. The larger non-domestic customers should also begin to benefit from an improved, more tailored service.

Unfortunately, prices will still have to increase for most customers during the next four years. Prices would, however, have increased much faster in the absence of the efficiency targets that I have agreed with the management of the water authorities.

I believe that it is in customers' interests that Parliament approve the establishment of Scottish Water. This organisation is likely to enjoy lower unit costs, meaning lower prices for customers than would otherwise be possible. I believe that a small real reduction could be possible in the next regulatory period. Even in the next four years, all domestic customers could face lower increases because of the improved prospect for efficiencies if the initiative to create Scottish Water is endorsed by the Scottish Parliament.

Section 1

Introduction



Section 1: Chapter 1

Introduction: Background, aims and critical issues

This is the first full Strategic Review of Charges of the Scottish water industry. It was commissioned by the Minister for Environment and Rural Development, Ross Finnie, MSP, on 21 August 2001, under section 13 of the Water Industry Act 1999. It was requested that this Review cover the period from April 2002 to March 2006 inclusive. The Review will outline the price and revenue implications both for the existing three authorities individually and for Scottish Water, the proposed merged body of the three authorities. The Review also draws attention to some charging issues, which would arise principally in the North, if the Scottish Parliament does not approve the proposed Water Services Bill.

This Strategic Review of Charges has been conducted in line with the Commissioning Letter, the Guidance from Scottish Ministers to the Water Industry Commissioner and the Quality and Standards Paper (which sets out the standards of drinking water quality and environmental protection that the water authorities need to meet). In particular, it assumes that the public expenditure allowances for the financial years 2004-05 and 2005-06 are maintained at their proposed 2003-04 level.

a) Structure of the Review

This Review sets out to provide a thorough overview of the issues facing the water industry in Scotland.

The Review assesses the revenue requirements of the three authorities independently and of the proposed Scottish Water. The operating environment faced by the Scottish Industry - in terms of the need for efficiency, the potential implications of competition and the expectations of customers - is broadly the same under the single or three authority options. My analysis therefore does not clearly differentiate between the single or three authority option until Section 7, where the financial assumptions underpinning the proposed revenue caps are outlined.

This Review comprises eight sections.

i) Section 1 (Chapter 1)

This introduction covers a little of the history of how we got to this point and the benefits that would come from the creation of the proposed Scottish Water. A brief summary of the principal aims of this Review is provided, as is an outline of the critical issues, which the industry faces.

ii) Section 2 (Chapters 2-10)

This section is a detailed description of the methodology that I have employed in coming to my recommendations to Scottish Ministers. Some of the detailed quantitative analysis described in Chapters 7, 8 and 9 is complex and is not vital to understanding the implications of the efficiency targets for customers. I would recommend that these nine Chapters are used selectively and that the reader refer back to those elements of process, which are of interest, rather than read this whole Section from start to finish before progressing.

Chapter 2 describes the high-level work plan that I used to ensure that each of the major business influences impacting the water industry in Scotland was properly assessed. Chapter 3 covers the collection of management and asset information to inform the Review. Chapter 4 describes many of the other factors that have had a critical impact on the Review. Chapter 5 discusses the customer analysis and consultation, which I have completed. Chapter 6 then outlines the analytical tools used to assess the impact of competition. Chapters 7 and 8 describe the complex quantitative and qualitative analysis that was completed in order to set the operating cost and capital efficiency targets. Chapter 9 is relevant only if the Scottish Water proposals are approved. It describes the analysis of efficiencies (over and above those detailed in Chapters 7 & 8) available from the merger of the three authorities. Chapter 10 describes the financial model and the checks that were implemented to ensure its accuracy.

iii) Section 3 (Chapters 11-14)

This Section discusses competition in the broader utilities sector and the potential for competition in the water sector. The Section concludes that if the efficiency issues are tackled properly by management, competition will bring only benefits to customers. Chapter 14 highlights the importance of accounting separation of the retail activities from the network and treatment business and any other commercial activities. It discusses protection that would be provided to customers if this were implemented.

iv) Section 4 (Chapters 15-21)

This section covers cost and financing issues. It starts with an overview of the capital programme, which is the largest single element of cost. These chapters include the efficiency targets for both operational and capital spending (Chapters 18 & 19)

and the savings that would be expected from the economies of scale and scope derived by having a single water authority in Scotland (Chapter 20). Also discussed in these chapters is the use of Public Private Partnership as a delivery mechanism for major capital projects in the water and sewerage industry (Chapter 17) and the difficult issue of debt and broader treasury management within the industry (Chapter 16). Chapter 21 concludes this section with a discussion of 'Spend to Save' and its importance to achieving the targets outlined in the previous three chapters.

v) Section 5 (Chapters 22-25)

This section concerns customer issues. Chapter 22 discusses improvements in customer service since 1996. Chapter 23 looks forward and addresses the improvements still required and the process through which I will ensure that they are delivered. Chapters 24 and 25 cover the issues of bad debt and affordability and charitable reliefs.

vi) Section 6 (Chapters 26 and 27)

Section 6 contains just two chapters. These chapters set out proposals to ensure that the Scottish water industry is sustainable in the public sector. Chapter 26 is about governance in the Scottish water industry and Chapter 27 concerns the threat that non-core business could pose to the efficiency targets and delivery of the capital investment programme.

vii) Section 7 (Chapters 28-39)

This section details the calculation of a revenue cap for the proposed Scottish Water and for each of the three authorities. Chapters 28 to 31 detail the assumptions used in the financial model for the proposed Scottish Water and for each of the existing three authorities. Chapters 32 to 37 summarise the results of the financial model for the merger and no-merger scenarios. Chapter 38 covers the revenue caps and estimates of likely domestic bills under each merger scenario. Chapter 39 contains the best news in this Review. This chapter explains that price rises can be restricted to below the rate of inflation after 2006, if the management achieve their efficiency targets.

viii) Section 8 (Chapter 40)

In this section I summarise the principal findings of my Review and detail the recommendations to Scottish Ministers.

b) Customer interest

As Water Industry Commissioner for Scotland, I have a statutory duty to promote the interests of customers. This is achieved by ensuring that service levels are maintained and improved and that costs are maintained at as low a level as is consistent with prudent sustainable management of the water industry. The Strategic Review of Charges, which will be commissioned every four years, provides advice to Scottish Ministers on the minimum revenue that the water authorities will have to raise in order properly to deliver the service level required by customers. This process should ensure that the industry is properly funded and efficient and that customers are not subjected to unexpected changes in tariffs. The Strategic Review is also an opportunity to suggest further improvements in the levels of service, which should be expected by customers.

The Strategic Review of Charges is the result of nearly two years of information preparation, collection and analysis. The Quality and Standards process has involved considerable effort by a great number of people at both a central and local level and has resulted in the clearest ever statement of the investment needs of the water industry in Scotland. The Review allows for this programme to be funded and for the existing service to customers to be improved. I would like to thank all those who have assisted in the collection and provision of all the information, which underpins this Review.

The recommendations on revenue levels and service levels are based on extensive consultation and research undertaken by my office. The revenue caps are set after reviewing the operating, capital and financing costs of the water authorities. These are benchmarked against the best in the industry - after full and proper allowance has been made for any special factors present in Scotland. My analysis also takes account of the charges that will be faced by customers, and increases are phased to try to make any adjustment as affordable as possible. Service levels are set to reflect the aspirations of customers expressed to us in public meetings and to take full account of the quantitative analysis of my Water Panel¹ and the issues that arise from our handling of complaints.

It is for the owner, board and management of the proposed Scottish Water, or the existing three authorities, to determine

¹ This is a panel of 2,250 domestic customers from throughout Scotland. The role of the panel is discussed in Chapter 5.

how best to deliver value for money to customers. There are important minimum agreed improvements in the levels of service available to customers and to public health and environmental compliance. These are not negotiable. It is, however, for management to establish an appropriate balance between operational and capital expenditure. My intention is to monitor the delivery of service level improvements within the agreed revenue cap.

This Strategic Review is important to customers because it is their guarantee that their interests are promoted and that they will have to pay no more than the minimum required for a sustainable industry. It will also ensure that they will enjoy improved levels of customer service and improvements to the environment.

c) Background

The water industry in Scotland took its present form of three public water authorities in April 1996. Prior to that date, water and sewerage services had been provided by the nine mainland regions and three island areas of local government. Historically there has been a trend towards concentration in this industry, prompted by advances in engineering and more demanding standards for customers and the environment. In 1945 there were 210 water authorities in Scotland, and even as recently as 1973 there were 234 separate sewerage authorities. By moving to three providers, significant economies of scale became possible for large areas of the country.

The water and sewerage industry is important to Scotland. It is vital for health and quality of life, and it is also a sufficiently large sector to have an influence on the Scottish economy. It currently employs more than 6,000 people, and has an annual turnover in excess of £0.8 billion. At present no fully reliable estimate exists of the replacement cost value of its assets, but this figure certainly exceeds £20 billion. This substantial industry demands effective management if the interests of all stakeholders are to be promoted.

When local government was restructured into the smaller unitary authorities, three public corporations were created to provide water and sewerage services. Assets and staff previously employed by local authorities in water and sewerage departments transferred to the new public bodies on 1 April

1996 under the Local Government etc. (Scotland) Act 1994, and from that date the new water authorities assumed their statutory duties to provide these services. In order to achieve their potential, it was judged that the new authorities should be established to operate more like businesses, i.e. in a more commercial manner, than as providers of a service to the community.

The country was divided into three areas of provision, largely reflecting the existing supply and disposal networks, and the boundaries of previous local authorities in Scotland:

- East of Scotland Water Authority, which serves the former Lothian, Borders, Fife, Central Regional Councils. The authority also took on responsibility for the Kinross area of Tayside and the services provided by the Central Scotland Water Development Board.
- North of Scotland Water Authority, which serves the former Highland, Grampian and Tayside Regions (excluding Kinross) and the Island Councils of Orkney, Shetland and the Western Isles.
- West of Scotland Water Authority, which serves the former Dumfries & Galloway and Strathclyde Regional Council Areas².

The main duties and functions of the water authorities were unchanged by the 1994 legislation. The main statutory bases for their actions are contained in the Sewerage (Scotland) Act 1968, the Water (Scotland) Act 1980, and successive legislation including European Union Directives.

The Government, as de facto owner of this public sector industry, commissioned a policy review of the industry following the General Election of May 1997. That review addressed issues of the accountability of the water authorities and their local responsiveness, but concluded that the essential structure and financial framework should remain unchanged. The review did make recommendations, which the Secretary of State accepted, to reform the economic regulation and customer representation functions that had been put in place by the 1994 Act. Since 1996, economic regulation had been exercised through a financial framework that was the responsibility of The Scottish Office. The combination of that function with the

² There is a small area (around Cumbernauld) where water is provided by East of Scotland Water Authority and sewerage services by West of Scotland Water Authority. This is the exception to the regional council boundaries.

statutory duties as Owner of the industry did not sit well with the customer representation function, which was the duty of the Scottish Water and Sewerage Customers Council. That Council also monitored standards of service, customer relations and had particular statutory roles in approving the authorities' Charges Schemes and Codes of Practice.

The 1997 policy review recommendations were implemented in the Water Industry Act 1999. The consequence was that the Customers Council was abolished and the Water Industry Commissioner for Scotland was established and empowered to take on the broad function of customer protection and economic regulation of the monopolistic water authorities. The Scottish Executive continues to monitor the water authorities' performance in fulfilling their obligations with regard to the quality of drinking water supplies. Similarly, the Scottish Environment Protection Agency has continued its key role in the regulation of discharges to the water environment.

The present situation is therefore that the water and sewerage industry in Scotland is currently in the form of three public water authorities constituted as trading bodies. The management of the industry is required to operate in a commercial manner, and it has already drawn in some new business skills at senior managerial levels. However, the industry remains within the public sector and is subject to strict controls as well as statutory duties to act in the interests of customers.

i) Interim Strategic Review of Charges

The recommendations of the interim Strategic Review of Charges were focused on ensuring that the customers of the Scottish water authorities continued to receive the very best value for money. A challenge was placed before each authority to address the issues of environmental and financial sustainability, enhancing water quality and to improve the efficiency of their operations and levels of customer service.

The interim Strategic Review addressed all aspects of the business of the water authorities and tailored the recommendations in the light of the costs, customer needs and competitive environment.

The interim Review was published on 26 January 2000 shortly before the Competition Act 1998 came into force on 1 March 2000. In that interim Review, I highlighted for the first time the

very significant potential impact that competition could have on the industry. It was noted that it is in the interests of all customers that their water authority is able to respond effectively to competitive threats, in both the short and long term. This is because of the fixed cost nature and long-term investment horizon of the water industry.

The Review therefore sought to balance the needs of the customers of today and of tomorrow. The purpose was to outline a strategy to promote the customer interest. This included:

- a revenue adjustment for each water authority to a level that was consistent with environmental improvements, improvements in asset performance and ensuring that future generations will be required to pay only for the service that they receive;
- the introduction of management information parameters, which would allow consistent efficiency targets to be set for all the Scottish water authorities and for proper comparisons to be drawn for benchmarking purposes;
- the introduction of a common asset management process, which would also allow the customer to be confident that best value in procurement and maintenance is achieved;
- the creation of a customer service vision of a future where the needs of individual customer groups are met to a greater extent than previously possible.

ii) Ministerial response to the interim Strategic Review of Charges

Sarah Boyack, the then Minister for Transport and the Environment, endorsed the broad message of the interim Review. She welcomed the initiatives on asset management, consistent management information and improved customer service. The proposed revenue increases were limited for East of Scotland Water and West of Scotland Water for both financial years, and for the 2001-02 financial year in the case of the North of Scotland Water Authority.

The reasons for limiting the increases in charges that had been recommended were the need for public debate about the rationale for charge increases and the need for more information to allow the long-term maintenance charge for underground infrastructure to be properly assessed.

Table 1.1: Proposed and actual revenue increases for Scottish water authorities in 1999–2000 and 2000–01

	Interim Review recommendation 2000–01	Interim Review recommendation 2001–02	Ministerial response 2000–01	Ministerial response 2001–02
East of Scotland Water Authority	19.9%	14.9%	15%	12%
North of Scotland Water Authority	35%	27%	35%	12%
West of Scotland Water Authority	19.9%	14.9%	15%	12%

Table 1.2: Proposed and actual revenue increases for Scottish water authorities over the two years to 2001–02

	Interim Review recommendation 2000–02	Ministerial response 2000–02	Reduction of revenue below recommended level
East of Scotland Water Authority ³	37.8%	28.8%	9%
North of Scotland Water Authority	71.5%	51.2%	20.3%
West of Scotland Water Authority	37.8%	28.8%	9%

The full Strategic Review of Charges process and, in particular, the extensive consultation with all stakeholders that has been undertaken has ensured that there has been a full and frank public debate about the need for increased charges. The more extensive and robust Quality and Standards process has also allowed an assessment of the available information and an appropriate judgement of the proper long-run capital maintenance requirement.

iii) Follow-through on interim Review recommendations

This first full Strategic Review of Charges has drawn extensively on two of the initiatives proposed in the interim Review. Considerable effort has gone into establishing a regulatory reporting framework that allows for consistent comparisons to be drawn with England and Wales and, indeed, between the Scottish authorities. There has also been significant progress towards identifying the principles of best practice asset management and this has informed the capital efficiency

process. These initiatives will continue to develop over the next few years and will be at the core of this office's attempts to promote the customer interest.

There have also been some significant developments in encouraging the water authorities to improve their customer service. Most obviously, nine Guaranteed Minimum Standards were introduced on 1 October 2000, following consultation. These standards brought the minimum service level guaranteed to Scottish customers in line with that provided by the privatised companies in England. In the past year, additional standards relating to water ingress into gas appliances and a clear policy on major incidents have been introduced. This office monitors, through a regular series of customer service quality assessments, the customer service performance of each of the water authorities. A quarterly customer service performance report is also generated, which summarises relative performance and potential areas for improvement.

³ East of Scotland Water Authority did not increase revenue by the full amount agreed under the revenue cap in 2001-02. The increase in revenue for the current year is estimated at 4%.

Unfortunately, I have to report that there has been no significant improvement in the efficiency of the three water authorities over the past two years. For East of Scotland Water Authority, the level of efficiency has remained broadly the same. The other two authorities appear to have become less efficient. There seems to be some improvement in the current year in the efficiency of the Scottish industry. This Review seeks to build upon this progress.

iv) Public response

There was understandable disquiet at the announcement of the significant increases in charges resulting from my interim Review. This was particularly marked in the North of Scotland, where the increase had been particularly steep. The differential in charges between the North and the Central Belt contributed to the sense of unfairness. The charges increase also provided a focus for customers who were not happy with the service provided by North of Scotland Water Authority or who had a separate interest (e.g. fluoridation).

Two messages were frequently repeated at the public meetings that we organised throughout the North of Scotland:

- the affordability of charges for customers;
- the “unfairness” of North of Scotland Water Authority charges, when compared with charge levels in the southern half of the country.

The former was addressed in a consultation by the Scottish Executive in November 2000 and the introduction of a Statutory Instrument which came into force on 1 April 2001⁴. The latter could not be resolved without restructuring the industry. Sam Galbraith, MSP, the then Minister for the Environment, announced an intention to consult on a restructuring of the industry in his Evidence to the Transport and Environment Committee of the Scottish Parliament on 28 February 2001.

One of the principal lessons that we learned from reactions to the interim Review is the need to explain the economics of the industry in a more immediate way. It is vital that customers begin to understand the link between their bills and cleaner beaches, fewer burst mains and improved water quality. It is also critical that customers understand that borrowing is not a panacea and, whilst it may limit charges in the short run, it will lead to far more significant increases in the medium to long term.

v) Views of the Transport and Environment Committee

The Transport and Environment Committee conducted an inquiry into the water industry between December 2000 and March 2001. The Committee reported on 21 June 2001. The main recommendations of the inquiry outlined the Committee's support for:

- the programme of environmental improvement,
- the phased introduction of competition,
- the establishment of the proposed Scottish Water,
- the operating cost efficiency targets set by this office,
- relief from water charges to selected charitable organisations.

It is important that the challenges facing the water industry are recognised and discussed fully. Such debate will result in a better outcome for customers, and is therefore something that I welcome.

vi) Creation of Scottish Water

A proposal to establish Scottish Water was launched by the Scottish Executive during February 2001. Following a subsequent consultation by the Scottish Executive that received a large response from stakeholders, the proposal was included in the Water Industry Bill.

There are three principal benefits that would result from the creation of Scottish Water:

- The most immediately obvious benefit to customers is that the new service provider would be able to offer a harmonised tariff to the domestic customer across Scotland, so customers with identical circumstances throughout Scotland will pay the same charges.
- There would also be considerable benefits of scale and scope, which result from the merger of the three authorities. The efficiency gains that would accrue to Scottish Water would mean that all customers in Scotland would be better off as a result of the merger. Customers in the North would benefit the most, but bills for all customers would be lower than they would otherwise have been⁵.
- The third major benefit from the creation of Scottish Water would be the opportunity to shape a high quality

⁴ The Domestic Water and Sewerage Charges (Reduction) (Scotland) Regulations 2001.

⁵ The modelling assumptions used are outlined in Chapter 28.

management team, capable of delivering a first rate service to customers at the lowest possible cost.

There are other benefits, which, while less significant in the short term, could turn out to be very important over the medium to long term. There is the opportunity to share best practice (for example in customer service) amongst the water authority managers in order that the customer experience is improved across Scotland. (These also include the “Scottish Water” brand, which will arguably be amongst the best water brands in the world.)

There is a clear consensus amongst stakeholders that water should remain in the public sector. There could be two threats to the continued existence of the water industry in the public sector. The first is the potential risk posed by competition; the second is the disillusionment of customers with the continuing escalation of prices for what is a basic, essential, commodity.

Controlling costs of service provision will be key if the competitive position of the water authorities in Scotland is to be maintained. Improving the quality of service provided and ensuring that customers understand what they are paying for will, however, also be significant. We return to the real threat posed by competition to the water industry in Chapter 11. The primary reason for seeking out efficiencies is to ensure that the service that is offered is as affordable as possible to customers. Further increasing borrowing to mitigate the current impact of the large investment programme required will only worsen the future implications for customers (see Chapter 16). This is because investment is likely to continue to be necessary at current or higher levels for the foreseeable future.

The potential efficiencies that have been identified are in excess of £400 million per annum. If these efficiencies are not achieved, charges in Scotland will have to be a further 40-50% higher. This would have the effect of making each of the three Scottish public authorities the most expensive to domestic and business customers in the UK. If prices were to increase significantly, there could be greater pressure on several of the larger non-domestic customers to look to on-site treatment of effluent, rather than to discharge to the public sewer. The likely result of that would be increased upward pressure on domestic prices.

The creation of the proposed Scottish Water would make the achievement of efficiencies easier. In large part this results from the economies of scale that would arise in areas such as procurement (greater buying power) and consolidation of properties.

There have been understandable fears about job losses or falls in the standard of service offered to customers as a result of the necessary efficiencies. I would like to emphasise that I will consider an efficiency to be achieved only when an equivalent or better level of service is delivered to customers at a lower cost. The on-going monitoring role of this office in reviewing the outputs achieved and the costs incurred will ensure that the efficiencies claimed will be real and in the customer interest.

d) Aims of this Review

This Strategic Review of Charges comes at a most opportune, though challenging time for the water industry in Scotland. Some challenges are specific to the industry in Scotland, others relate to the likelihood of increased UK and international commercial pressure and the developing competition framework. The principal aim of this Review is to ensure that the industry is properly funded to meet the challenges that lie ahead and that the customer pays no more than is necessary in the short, medium and long term.

The Review will for the first time provide customers with an accurate assessment of the likely increase in charges over the next four years. This will allow businesses and domestic households to plan with a lot more certainty. It will also enable customers to see that there is an end in sight to the annual round of much higher water bills. The aim of the Review is to establish a framework for the industry, which should ensure that there is no need for prices to increase beyond the rate of inflation - unless there is a major environmental spending requirement that is significantly greater than is currently expected.

This framework includes a balance between the need to close the efficiency gap that exists between the Scottish industry and its comparators, and the need to increase revenue. In order to achieve this, it is necessary to make a judgement as to how quickly efficiencies should be achieved, and what progress should be made towards adopting appropriate financial ratios

and policies. The detail of the Review will explain the rationale for the various decisions that I have made.

The Review also takes account of the differences between the current tariff regimes in the three existing authorities. The revenue caps take full account of these differences by ensuring that the benefits attributable to harmonising charges are taken into account before assessing the need for an increase in charges for those customers already paying the highest charges in Scotland. This should ensure that an effective and equitable charges scheme will be possible for the merged authority.

The Review also identifies service level improvements that should be achieved over the next four years. These improvements will be based on ensuring that best practice amongst the three authorities is achieved in each area. There are also examples of good practice from England and Wales, which it will be appropriate to ensure are introduced to the benefit of customers in Scotland.

The Review also identifies further improvements, both in the conduct of regulation and in the financial management of the water authorities. Addressing these issues will help to ensure that customers will benefit from improved value for money.

The overall framework for the industry is designed to ensure that the next four years are used as a transition to a properly funded, sustainable industry. It comprises five major elements:

- increased revenue to the minimum level consistent with the meeting of on-going maintenance and environmental/public health compliance;
- challenging but achievable efficiency targets;
- further improvement in customer service;
- harmonised and broadly cost-reflective tariffs;
- improved regulation and financial control.

The Review is comprised of a series of judgements as to the appropriate pace of transformation. Inevitably, in some cases I may unintentionally have favoured the customer at the expense of the management and in others I may have erred in favour of the management. My aim is to set targets that I believe should be achievable by good management. I want managers to succeed and believe that their success is very much in the

interests of customers. It is not therefore appropriate to look at the strategic framework provided other than as a whole. It is not an 'a la carte' menu from which the attractive elements of the strategy can be selected.

e) Context and critical issues

This section provides a summary of some of the key issues that are faced by stakeholders in the water industry, setting out for each the importance in terms of its impact on customers and on the revenue needs of the industry.

i) Environmental sustainability

The Scottish water industry successfully delivers a water and sewerage service to customers throughout the country. Relatively few customers experience problems⁶ and most problems are resolved quite effectively. The focus of water authority managements, however, has been on service delivery. Maintenance and investment has been a reactive response to system failures or the implementation of new environmental standards. From a customer perspective it would be better if the water authorities managed their assets in a more pro-active way so as to deliver an effective service both in the present and the future. Their reactive approach was the inevitable result of the annual funding cycle that characterised the industry. Effective asset management requires long-term visibility of investment funding and proper account to be taken of the comparatively long life of water and sewerage assets.

There has been substantial support amongst customers for the considerable environmental expenditure programme that is being undertaken by the water authorities. This support has been evident in public meetings of the Consultative Committees and, critically, in the views of the Water Panel. The most important customer priorities for investment were: improved sewage treatment, reducing the chance of flooding from sewers, improved water quality and reducing supply interruptions.

The main priorities of customers are that the service continues to be provided 'on demand' and at 'reasonable cost'. This can only be ensured if the industry operates efficiently and properly plans its investment programme. This Review, which makes recommendations on the revenue caps for the industry for the next four years, makes a significant contribution to providing the

⁶ The Water Panel, December 2000 and May 2001.

visibility that the water industry's management requires. The Quality and Standards process sets the performance and risk parameters that have to be achieved by the industry over the next four years. The intention of the selected 'Central Option' is that all the environmental compliance obligations resulting from European Union Directives, all public health targets and essential maintenance can be funded. The Central Option has been further enhanced to include more resources for the first time provision of water supply, the easing of development constraints and new connections to the sewerage system. The selected option does not, however, allow for any significant improvement in the overall network: it is assumed that the overall performance and serviceability of the network will be maintained at existing levels.

This investment therefore comprises a minimum programme consistent with each of the three authorities maintaining their asset bases and ensuring no further deterioration, as well as the improvements to the environment and to water quality. This is the essence of sustainability.

Inherited underspend

It is generally agreed that investment over the past two decades has been significantly below that which was required to maintain the water and sewerage system. The information on investment spending prior to 1996 is not complete, but it is possible to draw a broad comparison between spending in Scotland and in comparable areas of England and Wales. One of the clear conclusions is that whilst investment spending per capita in Scotland trailed badly in the early years of the 1990s, there has been a considerable relative improvement in the last few years.

It is likely that the relative spend in Scotland will be marginally ahead of the English and Welsh level over the next few years. This is fully consistent with the stated aim of the Quality and Standards Central Option, which is that environmental standards are met and that the current performance of the network is maintained or moderately enhanced. It is difficult to quantify the exact extent of the under-investment, but the total backlog of investment may amount to as much as £2.5 billion - around £500 for every person in Scotland. The 'Enhanced Option' in the Quality and Standards consultation estimated that it would take at least 20 years to bring the network up to an operationally ideal level.

Funding investment

A generation should pay the full cost of the water and sewerage services that it consumes. By its very nature, investment expenditure will be subject to peaks and troughs. Proper long term planning and management of the asset base and the use of borrowing can be effective in smoothing these peaks and troughs. The issue of borrowing and how this should be used is discussed in Chapter 16. The very long useful life of assets in the water and sewerage industry lends itself to effective forward planning. Even the introduction of tighter environmental and public health targets tends to have quite long lead times, which can be used to adapt investment plans to ensure their effective and timely introduction.

A useful example is that of a typical water main. The expected life of a water main is around 70-80 years. This average is broadly similar to average life expectancy. If, therefore, an individual lived in the same house for the whole of their life, it would be reasonable to expect that the water main supplying that property would be replaced once during the life of that individual. Obviously, the replacement of this water main could happen at any time during the life of the individual. Customers contribute to charges during each adult year of their life, some may pay in advance of receiving a new water main, others receive the new main earlier and pay for the remainder of their life. In effect, the whole customer base jointly purchases each year a quantity of refurbished mains which will keep the system in a fully serviceable order - they do this while recognising that they will benefit only once during their life from the replacement of the main but will during all the other years have access to a safe potable water service.

Another way of looking at this is to say that those, in any one year, who receive the new water main are borrowing from their fellow customers the excess of their contributions through charges prior to replacement of the main. In other words, the customer who receives a new main to serve their property before they begin to pay for the water service borrows the entire amount from fellow customers. The customer who receives a new main half way through their adult life will borrow approximately half the cost of the main from other customers, the rest being funded by contributions already made. Customers promise to continue to pay charges even after replacement of the main, in settlement of their debt (to fellow

customers), and these contributions allow each year for others to benefit from the refurbishment of the main that services their property. If the average rate of deterioration of the water main were regarded as broadly similar, each householder would receive the same average service over any period of 70-80 years.

The same principal applies to shorter life assets, such as technology (which would have a very short asset life of say 3-4 years) or water treatment plants (which would have a life of 25-30 years). They would be replaced on average between 3 (water treatment) and 25 (technology) times during the average customer's life. The result is that the portfolio of assets owned by a water authority can be properly maintained by an annual sum of money, which, if consistently invested, will ensure that the serviceability of the network is ensured.

On occasion there will be a need to improve the water and waste water assets, which provide service to customers, to meet a new higher standard, rather than replacing on a 'like for like' basis. Deadlines in these circumstances are likely to force the water authority, on behalf of all customers, to borrow in order to meet these obligations. This allows the costs to be spread over time. Such improvements will, however, inevitably increase the amount of money that the water authority has to raise from customers in order to bring the monies raised and the asset replacement liabilities back into balance.

As will be discussed later, borrowing more may seem attractive, but it must always be remembered that the resources will need to be raised from customers in order to pay interest and, ultimately to repay the original principal. Increased borrowing will, in the end, require increased revenue and therefore higher prices to be levied on customers. Borrowing should be used only to improve assets and not to replace assets, which have already been created and depreciated. There should of course be either a depreciation reserve or sufficient cashflow from operations to fund maintenance investment. Failure to act in this way will penalise future generations.

Impact on revenue and customers

The impact of increasing the level of investment will be to deliver a better maintained and sustainable system. There will be fewer burst water mains and better, lower cost solutions to

the ongoing investment needs of the industry. There will also be improvements to the environment (e.g. by continuing to improve beaches) and to continue to improve the already very high safety of our water supply (e.g. by continuing to reduce the concentration of lead in the water supply). The extra expense incurred in delivering these improvements will, however, have to be met by customers and will require more revenue to be raised and more debt (to finance the new improvements) to be incurred.

ii) Financial sustainability

The costs of providing the service can be broken down into the operational costs (the costs of running the system), the capital costs (the maintenance, replacement and upgrading of the assets) and financial costs (the costs associated with debts and funding working capital). Funding the costs of maintaining the system has to come from customers. If money is borrowed, the costs of these borrowings have to be met by customers both in the present and in the future. If Government provides a grant to the water services provider, the money for this grant also comes ultimately from the taxes paid by customers. Either taxes would have to be increased to meet this cost, or other central Government services would have to have their funding reduced to compensate. The customer interest is therefore clear: it is that the costs of service should be reduced to the minimum, which is consistent with the maintenance of a secure, safe and sustainable water and sewerage service.

Need for efficiency

Cutting costs and making 'efficiencies' are not the same thing - even though they are often understood to be synonymous. A true efficiency is achieved only when a service or product of equal utility is delivered or created for less cost. It is not in the customer interest to cut costs in any way that will have an adverse impact upon the service that is provided to the customer. Nor is it acceptable to take short cuts with safety, public health or the environment.

Every pound that is spent by a water authority ought to be spent as efficiently as possible and with the goal of ensuring a sustainable industry. The customer interest is maximised by achieving this goal. In preparing for this Review, extensive effort has gone into examining all the costs of each water authority and of the proposed merged authority, Scottish Water, to

ascertain what savings may be available. The simple comparison shown in Figure 1.1 highlights the clear scope for efficiency that exists.

Figure 1.1: Comparison of operating expenditure and population served 1999-2000

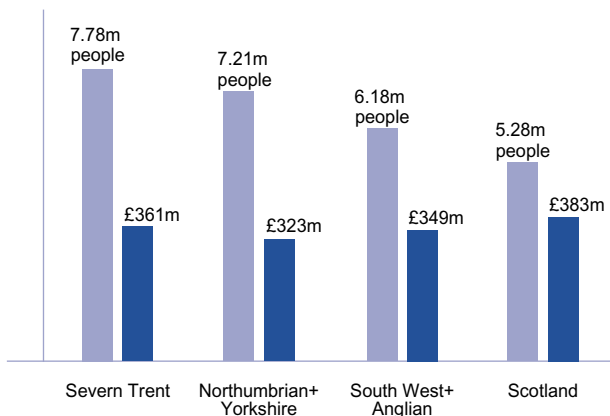
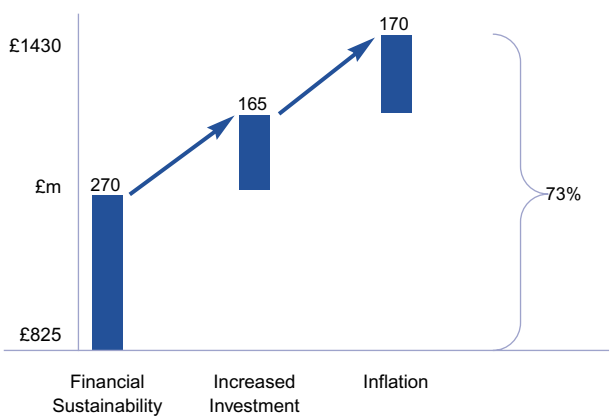


Figure 1.2 outlines the impact on the revenue required by the single water authority, Scottish Water, if no efficiencies were achieved. Revenue would have to increase by some 70+% in nominal terms for outgoings and expenditure to be broadly in balance by 2005-06. Revenue would need to increase for three principal reasons:

- inflation;
- increased maintenance and environmental spending;
- achieving financial sustainability (bringing revenues into line with long-run expenditure).

Figure 1.2: Impact on revenue without efficiencies



If charges are to remain affordable to customers, then it is essential that efficiencies are achieved. The extent of the efficiencies achievable is outlined in Chapters 18, 19 and 20.

Paying a fair share

It is important for charges to reflect the costs of supply to customers to an appropriate degree. This does not mean full cost reflectivity – as this is not realistically achievable. The implication of full cost reflectivity would mean that literally every connection to the water and sewerage system would require a different price to be set. Even if this were manageable (which is highly doubtful), it would significantly increase the costs of collection and would therefore not be in the interests of customers. It is common in most countries for water charges to reflect the social priorities of governments, and Scotland and even England (where the industry is in the private sector) are no different. An appropriate degree of cost reflectivity simply means that account is taken of the economic costs of supply in assessing the level of prices.

One of the complicating factors, which makes this broad reflection of costs in tariffs more difficult, is the high proportion of fixed costs in the overall costs of supply. The other complicating factor is the extent to which a single water main is being shared by a large number of customers with different needs. Once the distribution network has been built it is important to use the created capacity to the maximum possible extent and as a consequence reduce the unit costs to all customers.

It is therefore important that charges are not set at a level that is so much greater than the cost-reflective price that some customers are encouraged to adopt alternative solutions to their water and sewerage service needs. This could result either from significant inefficiency or if tariffs are not broadly reflective of the costs of supply. The outcome is that some customers go 'off-network', i.e. opt for service from a non-public sector provider. All customers suffer if a large customer is forced to seek private solutions to their individual needs in this way. The loss of the contribution from a large customer to the essentially fixed costs of the industry has to be borne by all other customers. In essence, the unit costs for other customers are increased. A simple example may illustrate.

- There are ten customers, one of whom accounts for 50% of the total costs of supply. The other nine customers are identical.
- Fixed costs of supply are £18 million.
- Variable costs of supply are £1.8 million.
- Prices are equal to costs.

The largest customer therefore pays 50% of the £18 million fixed cost and 50% of £1.8 million of variable cost. His bill is therefore equal to £9.9 million (£9 million + £0.9 million). Each of the remaining nine customers would face a bill of £1.1 million. (This comprises a ninth share of the remaining fixed costs of £9 million and a ninth share of the remaining variable costs of £0.9 million.)

If this large customer were to opt to leave the network, the only costs that would not be incurred by the supplier are the £0.9 million of variable costs. The total costs faced by the remaining nine customers has now increased to £2.1 million from £1.1 million. The increase of £1 million results from the ninth share of the fixed costs of £9 million, which were previously paid by the large customer who has now left the network.

It is, therefore, desirable to ensure that prices are not set above the level of economic value provided. If this is achieved, it should not be attractive to a customer to seek an off-network solution. It should not be economically viable to replicate water or sewerage infrastructure on a single site.

An efficient industry, which properly understands both the service it provides and its costs, should not be particularly vulnerable to such off-network competition.

The link to Council Tax bands is generally seen as a relatively fair method of charging domestic customers. It would seem to be preferred to other methods such as metering. In a survey of domestic customers most (33%) felt that the Council Tax system was the fairest way of charging. The link to Council Tax, however, does bring about some anomalies, such as the discount for second homes and empty properties.

The cost of water and sewerage services is largely incurred for providing the infrastructure required to supply the service, rather than relating to the amount of water consumed or quantity of sewage disposed of. The infrastructure, which is

made available such that a service is available whenever it is required, does deteriorate (largely irrespective of use) and therefore the owner of the connected property should make an appropriate contribution to the service that is provided - whether or not they choose to make use of it.

Other anomalies include the exemption from all drainage and sewerage charges enjoyed by the owners of septic tanks (either domestic or non-domestic). It is appropriate that properties whose foul and run-off waste water does not drain to sewer should not be charged for a service that is not provided. However, an element of the sewerage charge does go towards the costs of providing drainage to highways. It would therefore be appropriate that properties with septic tanks make a contribution towards this service, from which they do receive benefit. These anomalies increase the bills of all other customers, including the vulnerable.

The issue of exemptions and reliefs is also important in this context. If these are to be provided through the mechanism of water charges, then they ought to be transparent so that customers understand what they are paying for. It is also likely to be important in a competitive market situation that if reliefs are to continue to be provided through water charges, all new entrants should make a proportionate contribution to the costs of these reliefs. Account should also be taken of the impact on business costs arising from the provision of these reliefs. The issue of charitable reliefs is discussed later in Chapter 25.

Impact on revenue and customers

The impact of incorrect assessments of tariffs, such that they are set at a level in excess of the economic value provided, can be quite significant. If this leads to a large customer leaving the public network in favour of a private solution - not because it is economically more viable but only because tariffs have been set at an inappropriate level - then other customers will end up paying significantly more than would otherwise have been the case. If, for example, the largest customer in the East of Scotland area were to opt for a fully off-network solution, this could increase bills by some 5% for *all* other customers in that area.

In a similar way, if tariffs are set such that a service is provided below cost to a group of customers, then the consequence is that the other connected customers are required to pay more

than would otherwise have been the case. There are a number of inequalities such as reliefs, second home discounts and road drainage exemptions for the owners of septic tanks, which are likely to be services provided below cost to the customer and which are therefore increasing the costs (and prices) faced by other customers. If there are reasons of social policy for these services to be provided below cost, that is a matter for Government; however, funding these through customer charges is likely to distort the competitive market and disadvantage the public sector supplier and ultimately its customers.

iii) Survival of the public sector model

Regulation of business activity that is in public ownership presents quite different challenges from the regulatory function as applied to the privately owned monopoly. The most obvious difference is that the regulator does not have to decide the distribution of benefits from efficiencies between shareholder and customer. Where the business is publicly owned all benefits from efficiency will ultimately go to the consumer/tax payer. It is for Government as de facto owner of the industry to decide whether these benefits are taken in the form of further improvements to the environment, lower charges, and/or reductions in public expenditure.

Since the cost of capital for even the best private company is higher, albeit marginally, than for Government, there is no reason why the public sector should not be capable of ensuring value for money in the provision of water and sewerage services. This will require management to be as effective as their private sector counterparts. An effective management will be defined by its success in being as commercially astute, as rigorous in pursuing operating and capital expenditure efficiency and as innovative as the private sector.

This will require considerable dexterity on the part of the Scottish Executive as de facto owner of the industry. There will inevitably be a pressure, especially given the proposed merger to a single authority, to maintain local accountability through the board of Scottish Water. This would be a mistake - not because local accountability is not important (it is, very) but because customers ultimately need the water service to be provided as efficiently as possible and wish to see service levels continue to improve. If management are to be held to account for the delivery of service to customers at an efficient level of cost, this can only be done through the appointment of an experienced

board. Strategy needs to be determined between the board and the owner.

The owner must act through this new commercially strengthened board in order to ensure that the authority becomes financially sustainable and meets its strategic goals. These goals - in their broadest strategic sense - are properly a matter for our elected representatives.

The board will then be responsible for the communication and implementation of this strategy with management.

This board will have to be properly resourced to ensure that the actions of management can be scrutinised in some detail. In particular, the non-executive members of the board should have experience in finance, assets and risk management, and customer management.

Local accountability

Local accountability will, however, still be of the highest importance. This can be achieved in three ways.

- Firstly, the Scottish Executive should publish a clear set of principles that the water authority must adhere to.
- Second, the new authority should consult actively with customers and should publish summaries of these consultations and responses on their website.
- Third, the current system of Consultative Committees should be strengthened and extended to ensure that customers' views are passed back to the water authorities and reflected in the development of service levels.

It is financial sustainability and customers' faith in the value for money provided that will determine the success of the public sector model. The status quo (even post the establishment of the proposed Scottish Water) is not an option.

Impact on revenue and customers

It is important that all stakeholders recognise the changes in the operating environment faced by the water industry in Scotland. If the public sector model is to survive, it is vital that it is given a fair chance of success and is not hindered by unreasonable criticism or restrictions on what it can or cannot do. It is also vital

that there is the best possible quality of management that is properly incentivised and, in parallel, held fully to account for its performance. The public sector model, which benefits from a lower cost of capital, can result in lower bills to customers. If the governance structures are set up to encourage and applaud success and to hold the management firmly to account for failures to deliver - then the customer will be a clear beneficiary.

iv) Competition and choice

Customers are becoming more aware than ever before of what they pay for their water and sewerage bill. Continuing significant increases would fundamentally undermine public faith and business confidence in the Scottish public sector model. This Strategic Review of Charges takes a first step in assessing the vulnerability of the water sector in Scotland to competition. The Review also outlines some of the actions that would ensure that customers as opposed to 'cherry-pickers'⁷ would benefit from the introduction of competition. In principle, competition is a good thing and benefits have accrued to customers both in terms of prices and levels of service from the introduction of competition into the gas and electricity sectors. The privatised water sector in England and Wales has also benefited from the regulator's use of comparative competition to force down costs and improve levels of service.

As discussed above, the water industry is almost totally fixed cost in structure and non-infrastructure asset lives are, on average, around 25 years. The effect of this is to make customer retention especially important. The key concept is contribution to fixed costs. Contribution to fixed costs is defined as the excess over the variable costs of supply received in revenue from any single customer.

Customers can be lost if either the customer elects to go off-network (in which case all of the revenue they paid will be lost), or if the retail relationship with the customer is lost, (in which case the maximum contribution lost should be limited at retail price - cost and margin of treated water - costs and margin of use of network). Inevitably therefore the loss of a customer to the network as a whole is very much more serious than the loss of the retail relationship with that customer.

The option of 'common carriage' is an intermediate option in its potential impact on the revenue of the incumbent water authority. In this case, the maximum contribution lost should be equal to retail price - costs and margin charged for use of network.

This Review assesses the value chain and the incidence of costs. It becomes clear that the most important factor in maintaining revenue is the correct allocation of costs to the retail, network and treatment aspects of the business. Tariffs then need to be set accordingly. Understanding the incidence of costs of operation can also be seen to have had a material impact on the achievement of efficiencies in other utilities.

In particular, the allocation of costs to the distribution network is important. The distribution (or collection in the case of sewage) network is a natural monopoly. A natural monopoly cannot be replicated economically and therefore has all the characteristics of an 'essential facility' as defined in the Competition Act 1998. The owner of such an essential facility or natural monopoly is required by the Competition Act to make this network available to a third party, if technically feasible, for a reasonable price. This price is determined by the access code that is set by the owner of the essential facility. It is clearly important for an incumbent to allocate all costs properly to the service provided. The third party would obviously point out if costs were demonstrably too high, but is unlikely to indicate if the service is being provided at lower than full cost.

Efficiency is the best defence to a competitive threat. If the Scottish water industry can approach the 'efficiency frontier' and price accordingly there will not be the economic incentive to look at off-network solutions. In many cases these solutions have appeared attractive because of the tariffing regime and the incumbent's inefficiency. Understanding also the value of all services provided, including the 'supplier of last resort' service will also better prepare the incumbent to manage its revenue base and protect the interests of all customers.

Competition has already had an impact on the revenues of the water sector in Scotland. In part this has resulted from the cross-subsidy that may exist in Scotland from the non-domestic

⁷ A 'cherry-picker' is an individual or organisation that targets the highest margin customers and serves only them. The aim is to benefit by not having to supply customers who are technically more difficult or expensive to supply. In this way the 'cherry-picker' can take advantage of the averaged price without any of the disbenefits that the averaged price level reflects.

sector to the domestic sector; in part from tariffs not reflecting the fixed costs of access to the network; and in part from an over-zealous attempt to fend off new entrants. The largest non-domestic users will continue to be obvious targets for new entrants into the Scottish water market - but it is essential that the response is measured and that the primary focus is on efficiency and matching tariffs to the economics of supply. This will improve the sustainability of the revenue base and strengthen the Scottish industry's competitive position.

Impact on revenue and customers

It is in the customer interest that the water authorities do not lose their competitive position by being inefficient. If a customer is not retained, or significantly reduces the charge they pay, that revenue deficit has to be made up by other charge payers. Most commonly, given that there is cross-subsidy from larger businesses to other customers, it is the domestic consumer and small businesses that will end up footing the bill. For example, a reduction of £5 million in charges paid by the Scottish non-domestic sector would add on average 1.0% (£3.50) to domestic charges. It is therefore in the interests of small customers that the water authorities manage their relationship with large customers in an effective way and have the right tariffs in place.

v) Comparison with England and Wales

As a relatively new regulator, the Water Industry Commissioner is able to benefit from the experience of the other UK regulators in electricity, gas and telecommunications and in particular from the water industry regulator, Ofwat (the Office of Water Services). It is important that the relative starting points of the industry in Scotland on the one hand, and in England and Wales on the other, are taken into account before discussing pricing.

The English and Welsh privatised companies have been forced by regulators to improve significantly their environmental compliance and public health performance, at the same time as there has been pressure to improve customer service and to generate efficiencies. There has been a considerable improvement in the efficiency and levels of customer service provided by the privatised companies in England over the past

decade. Efficiency in operating costs will approach 50% by 2005 and service levels are much better. At the same time, water quality compliance has improved significantly (from 99.00% to 99.83%) and leakage has been reduced from 30% to 22%. This regulatory regime has become more and more demanding, and this has resulted in the privatised companies looking either to restructure or to target non-regulated opportunities to improve returns for shareholders.

In this regard, Scotland is an attractive market for the privatised company who seeks a non-regulated opportunity. This increases the importance of accelerating the move towards a full understanding of where costs are incurred across the value chain. If the access charges of the proposed Scottish Water are accurate and if the company can begin to test the efficiency frontier, then the impact of competition is likely to be limited.

Impact on revenue and customers

Inevitably, there will be comparisons between the levels of charges in England and Wales and those in Scotland. In the past, too much emphasis was placed by the Scottish water authorities on having the lowest domestic charges in the UK and too little thought was given to the prospects for prices once the authorities began to tackle their environmental compliance targets. The result of this Review is that Scottish domestic charges will not be significantly in excess of the average charge in England by 2005-06⁸.

vi) Improvements in customer service

It is clear from the extensive consultation programme we have undertaken that each of the three authorities is perceived to have made significant improvements in customer service. It is also clear that there is a long way still to go if the expectations of customers are to be met.

Customer service may not be as high up the immediate list of priorities as minimising prices, but it may be almost as important in maintaining revenue for the retail service. Switching a service provider is often the result of an unsatisfactory customer service experience rather than the availability of a lower bill. In many cases the lower bill would appear⁹ to be a

⁸ This assumes that there is no further price cut implemented by Ofwat in its 2004 Periodic Review.

⁹ *Experience of the Competitive market – The Domestic Electricity and Gas Markets*. Research Study conducted for Ofgem by Mori, January 2001.

secondary benefit of the decision to switch to a new supplier. One of the key success factors for the proposed Scottish Water will be to identify and segment its customers. This will also involve the recognition that the authority is likely to have wholesale as well as retail customers and it will have to learn to service both types effectively.

Customer service is also the key to accessing other commercial opportunities from the customer base. Water supply or sewage collection customers may be interested in receiving other services such as environmental or water management. Also there may well be partnership opportunities with other service providers, which could be both profitable for the water authority and useful to the customer. In the long run it will be important that all such opportunities are assessed if the proposed Scottish Water is to be as successful as is hoped. Those opportunities, which are commercially viable, within an agreed risk profile and in the customer interest, should be pursued. In the short to medium term, any assessment of an opportunity, must, however, take into account the relative importance of the efficiency and tariff-setting initiatives and the primary focus, therefore, should be on reducing costs.

The level of customer service is a major factor in this Review. There is also a discussion of the issues surrounding the participation of the proposed Scottish Water in new business activities. New business is seen to be more of a distraction than an opportunity. The targets for revenue therefore only reflect existing operations and levels of investment.

Impact on revenue and customers

The level of service expected by customers is a moving target. The level of service that was acceptable ten or even five years ago is no longer acceptable. The level of service will determine the willingness of customers to pay and their willingness to remain with the incumbent supplier, if they are presented with a choice. It is, therefore, vital that the public sector supplier continues to improve the level of service and addresses the needs of customers. It is not sufficient simply to ask about satisfaction with the level of service provided, as this may and probably does mask low expectations. It is far better to ask about the reasons why a customer might switch supplier, as this will provide an indication of what the customer really feels. Although there is no immediate causal link between level of

service and the level of revenue, it is in both the interests of the customer and ultimately of the supplier to provide an improving level of service.

Section 2

Methodology

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Section 2: Chapter 2

Methodology: Introduction

a) Introduction

In this section I describe in detail the methodology that underpins this, my first full Strategic Review of Charges. My office has been preparing for this first full Review since its establishment in November 1999. The methodology is, I believe, very robust and needs to be outlined in some detail. Some elements of the methodology are very technical and are not essential to a high level understanding of the recommendations of the Review. Some readers may therefore wish to read this section selectively.

This Section comprises nine chapters, covering all of the major work areas that have informed my Review.

Chapter 3 describes the collection of information. The single largest component of this was the Information Project, which I initiated following the welcome by the then Minister for Transport and the Environment of my recommendation for consistent management information in the interim Review. This is followed by Chapter 4, which outlines a number of the other sources of information that were an important input into my Review. This chapter also includes a brief overview of the techniques used by other regulators.

Chapters 5 to 9 then discuss in some detail the methodology behind my calculation of efficiency targets and merger savings; and how I assessed customer needs and the issues surrounding competition.

Chapter 10 discusses the financial model and my risk analysis.

The first major task was to define the major issues to be analysed and compile a work plan, which ensured that each issue was analysed in detail and took into account all of the relevant factors. This work plan is described below.

b) Work plan

My initial focus was on the customer, as I wished to ensure that I had a full understanding of the priorities of the customer. I therefore developed a plan, which comprised both a quantitative and a qualitative element. My plan was to establish a process of consultation that was both extensive and in-depth. I put in place a consultation process with each of the broad

segments of customers. This included a large user group, organisations representing the non-domestic sector and, of course, my Consultative Committees. This qualitative information was supported by questionnaires sent to non-domestic customers. I also established a customer panel to track, quantitatively, the views of domestic customers.

The second major area of focus was to understand the costs incurred by each of the three authorities and the potential for savings. To that end, I planned to use the privatised companies in England and Wales as benchmarks to allow me to set both capital investment and operating cost efficiency targets.

The third principal issue was the potential impact of competition. The plan was to understand what had happened to date in the water industry, why it had happened and the likely effective response. I also reviewed the development of competition in other utilities in order to understand what lessons could be learned about potential future developments in the water sector.

I then identified and investigated a number of organisational and governance issues, which I believed could be important to my Review. These included incentives and opportunities to profit from new business.

I pursued these work areas separately, although there were frequent interactions between the small teams responsible for each area.

I have consulted as extensively as possible with a range of organisations to understand either the impact of our conclusions or to test the validity of my logic. The next chapter discusses in some detail the development of my information project. This led to the creation of a regulatory database, which allows me effectively to compare, and to monitor the progress of, the water industry in Scotland.

Section 2: Chapter 3

Methodology: Collection of Information

a) Information Project

i) Background

In my interim Strategic Review of Charges, I signalled my intention to establish a mechanism to ensure that it would be possible to carry out rigorous comparisons between the water authorities and between the industry in Scotland and in England and Wales. This initiative was welcomed by the then Minister for Transport and the Environment. I recruited a consortium of firms to work jointly with members of my staff to assist in this initiative. The tendering process followed European procurement rules. The consortium brought in a range of engineering, strategic asset management, IT and financial modelling expertise. I believe that the consortium provided a wide range of practical experience both of regulation and of the operation of a utility business, and was therefore exceptionally well qualified to assist me in this important initiative.

My Information Project has created a database of asset, customer and financial information for each of the current water authorities. Each data point is clearly defined and, as a result, the information from each authority should be consistent and comparable. The definitions are fully consistent with those in the

annual return provided by the privatised companies to Ofwat. The regulatory return ensures that the level of transparency in performance is much improved. This transparency has led directly to the capital, operating and merger efficiency targets that I set out later. It has also led me to conclude that the interests of all customers are best served by the move to a single water authority.

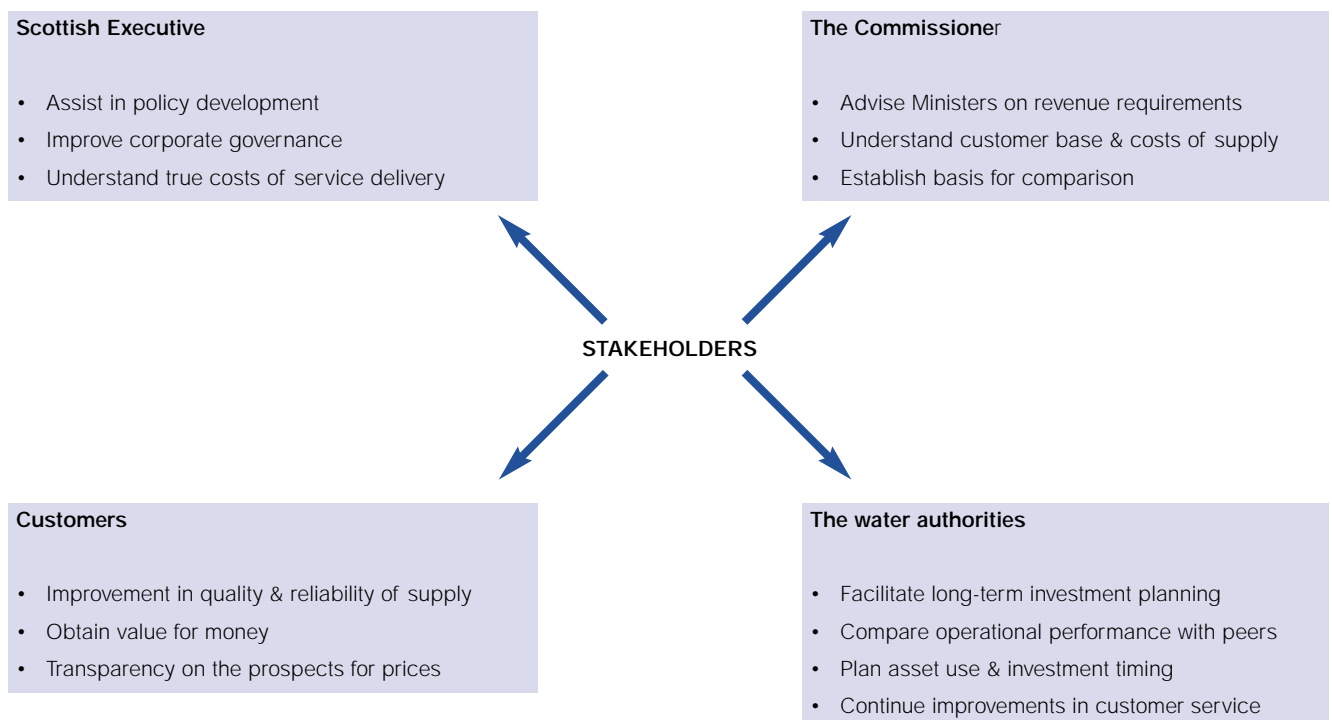
I believe that this initiative ensures that my office can robustly promote the interests of customers.

ii) Approach

There were three companies in the consortium. Cap Gemini Ernst & Young provided expertise in database development and project management. Yorkshire Electricity shared its best practice utility asset management knowledge and WS Atkins added its water industry knowledge. WS Atkins is also a Reporter for Ofwat and therefore has a detailed understanding of the regulatory process.

My approach to the Information Project was to ensure collaboration between the consultants, my staff and the water authorities. I believe that the water authorities had to understand both the reasons for the Information Project and how this

Figure 3.1: Key stakeholders of the Information Project and their objectives



information could be useful to them in delivering services to customers. Initially two rounds of interviews were held with key staff in each authority. These were designed to develop an initial opinion of the information available within the water authorities.

The Information Project addressed the needs of four key stakeholder groups, shown in Figure 3.1.

iii) Project deliverables

The five main outputs that the Information Project was required to deliver were to:

- determine the extent of the information to be collected for the regulator,
- generate agreed definitions,
- build a database to store the regulatory returns,
- define econometric models and processes,
- produce a financial model for the assessment of revenue needs.

These outputs were delivered in four phases over ten months.

Regulation depends to a critical extent upon the collection of information. The first phase of the project focused principally on the reporting formats to supply that information to my office. Specifically, the deliverables of phase one were as follows:

- A format for the annual return of data for regulatory purposes: this included cost allocations, performance measures, and customer information.
- A format for an asset inventory: this included asset condition, performance, risk profile and replacement cost.
- A capital cost base: this included the major categories of investment and allowed comparison with benchmark performance.
- An investment plan: this included all investment projects required by the Quality and Standards process and ensured that a forward view of the asset inventory was possible.
- A format for a Strategic Business Plan: this was to inform me as regulator about how the authorities saw their environment. My intention was that this should be analysed across five parameters: customers, competitors, costs, competencies¹ and compliance.

The second phase of the project set out to establish the current availability of the information required to complete the regulatory return. This assessment reviewed the availability of information regarding:

- customers,
- assets & physical resources,
- volumes of water supplied and sewage treated,
- explanatory factors,
- geographical breakdown,
- unit costs,
- investment projections,
- financial projections,
- project & output monitoring.

I asked the authorities to address any gaps in the requested information in Action Plans. I will discuss the conclusions of this phase of the Information Project in some detail later in this chapter.

The third phase of the project was designed to update the Ofwat econometric models and ensure that they adequately reflected the situation in Scotland. There were a number of issues that had to be addressed, namely:

- the impact of Public Private Partnerships (PPPs),
- comparative capital costs,
- comparative operating expenditure,
- comparative levels of service,
- type of asset base.

The fourth phase of the Information Project was the development of the actual database for storing the information provided in regulatory returns. The database had to meet a number of criteria:

- storage capacity to hold over ten years' data,
- flexibility to key in and update data values,
- ghost data facility (assumptions and/or predictions),
- report facility to output data in pre-defined format,
- audit trail of all data changes,
- compatible with any future licensing regime.

I also asked the consultants to review the financial model. I use this model for the calculation of the required revenue under a range of cost assumptions.

¹ Core skills and experience of the organisation.

iv) Annual return

The single most important output of the Information Project is the annual return. I wanted to be sure that I could benchmark costs with the privatised companies in England and Wales. I therefore asked the consultants to start with the equivalent information return used by Ofwat. This is the 'June Return'. This return consists of 38 tables that the companies must complete. It is a robust and detailed set of information on each area of the water and waste water business and all associated costs. Each line of information requested in each table has a precise definition. This is designed to ensure that all companies complete the tables in exactly the same way. Ofwat also collects other data from the companies. This includes the asset inventory and the 'cost base', which is used to assess capital unit costs.

I had to ensure that the 'June Return' format would be wholly applicable to Scotland. This necessitated certain changes to cover circumstances peculiar to Scotland (e.g. PPP costs).

My WIC Annual Return consists of 12 separate sections and comprises 97 tables, with over 20,000 items of data. The scope of each of the 12 sections is summarised below.

Section A – This records base information on population and properties connected to the water and waste water system. It also records the amount of water delivered by each authority and the volume of sewage treated.

Section B – This section contains the outputs to customers. In particular, it covers the availability of water to customers, details of supply interruptions, sewage flooding incidents, customer complaints and enquiries, and the performance of the water authorities in relation to their Guaranteed Minimum Standards schemes.

Section C – This section is concerned with quality and environmental outputs. It records details of the compliance of the authorities with water quality regulations; with waste water discharge consents for sewage treatment works; and with bathing water regulations. This section also looks at asset performance and is used to assist in the prioritising of capital maintenance expenditure to minimise the risk of non compliance.

Section D – This section records information on commissioned assets in the year for water, waste water and support services. The tables provide a summary of commissioned assets each year and

provide the link between outputs and the related investment for both asset replacement and new or enhanced assets.

Section E – This section covers operating costs and efficiencies. It records details of activity-based costing for the water and waste water service; information on individual PPP schemes; water and waste water explanatory factors; sludge treatment and means of disposal; and employee numbers and costs. This data is used to analyse operating cost trends and to calculate unit costs.

Section F – This section focuses on the Statutory Accounts, for example, the income and expenditure account, the balance sheet and the cash flow statement.

Section G – This section summarises the authorities' investment plans for water, waste water and support services. This section enables the authorities to present their capital expenditure programme (at project level) showing the actual expenditure for the year and updated forecasts for future years. This allows comparisons with the planned expenditure defined in the Investment Plan for the period of the Review.

Section H – This section reports on the asset inventory and system performance. It covers details of asset age, condition and performance.

Section J – This section is concerned with cost base information. The cost base is a key information submission that is to be developed by the authorities in support of their investment projections. The cost base submission consists of a set of capital unit cost estimates for standardised projects (standard costs). These standard costs relate to work that has been or is likely to be undertaken by authorities as part of their future investment programmes.

Section K – This section reports on the authorities' Investment Plans for the future. It is the output from the Strategic Business Plan and the Quality and Standards processes. It should detail the capital investment needed to deliver the outputs and assets necessary to meet the business objectives defined in the Strategic Business Plan. It should also reflect the capital efficiency requirements agreed with me.

Section L – This section, like Section F, focuses on the Statutory Accounts. However, under resource accounting and budgeting

(RAB), accounts will be prepared under the modified historical cost accounting convention. Fixed assets, current asset investments in marketable securities, and stocks (where material) should therefore be shown at their current values.

Section S – This section provides a framework for preparation of a Strategic Business Plan by the authority in order to inform me of the strategic issues that the authority faces.

These tables and definitions are provided to each authority in an electronic format, which makes them easier to complete and to submit to me.

The scale of the information requirement is obviously large and varied, and it will take some time before all of the information is as accurate as either I or the water authorities would like. I have therefore adopted confidence grades, as Ofwat has done, in order that I can assess the information provided for reliability and accuracy. These grades are shown in Table 3.1.

Table 3.1: Information Project confidence grades

Reliability Band	Description
A	Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment.
B	As A but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation.
C	Extrapolation from limited sample for which Grade A or B data is available.
D	Unconfirmed verbal reports, cursory inspections or analysis.

Accuracy Band	Accuracy to or within +/-	but outside +/-
1	1%	
2	5%	1%
3	10%	5%
4	25%	10%
5	50%	25%
6	100%	50%
X	accuracy outside +/- 100 %, zero or small numbers or otherwise incompatible	

The confidence grade is a combination of the reliability and accuracy band, for example:

- A2 Data based on sound records etc. (A, highly reliable) and estimated to be within +/- 5% (accuracy band 2);
- C4 Data based on extrapolation from a limited sample (C, unreliable) and estimated to be within +/- 25% (accuracy band 4).

In addition, I have asked the authorities to provide a written commentary to each table detailing the source of their information and any assumptions made when completing the tables. In particular, I am keen to receive a detailed commentary where confidence grades are low.

In order to ensure that the quality of information that informs this Review is as good as possible, my office requested two 'dry run' annual returns. This gave the water authorities time to identify problem areas and improve the overall quality of their submission.

The 'dry run' returns suggested that considerable effort would be required in order to generate the data to inform accurately this Review. I received the first full annual return in June 2001. I am glad to report that there were substantial improvements in the information submitted to my office. However, there were still gaps and I had to clarify several points with the authorities. While not by any means perfect, I am now confident that the data that has been provided is sufficiently accurate and complete to inform this Strategic Review of Charges.

v) Application of annual return information

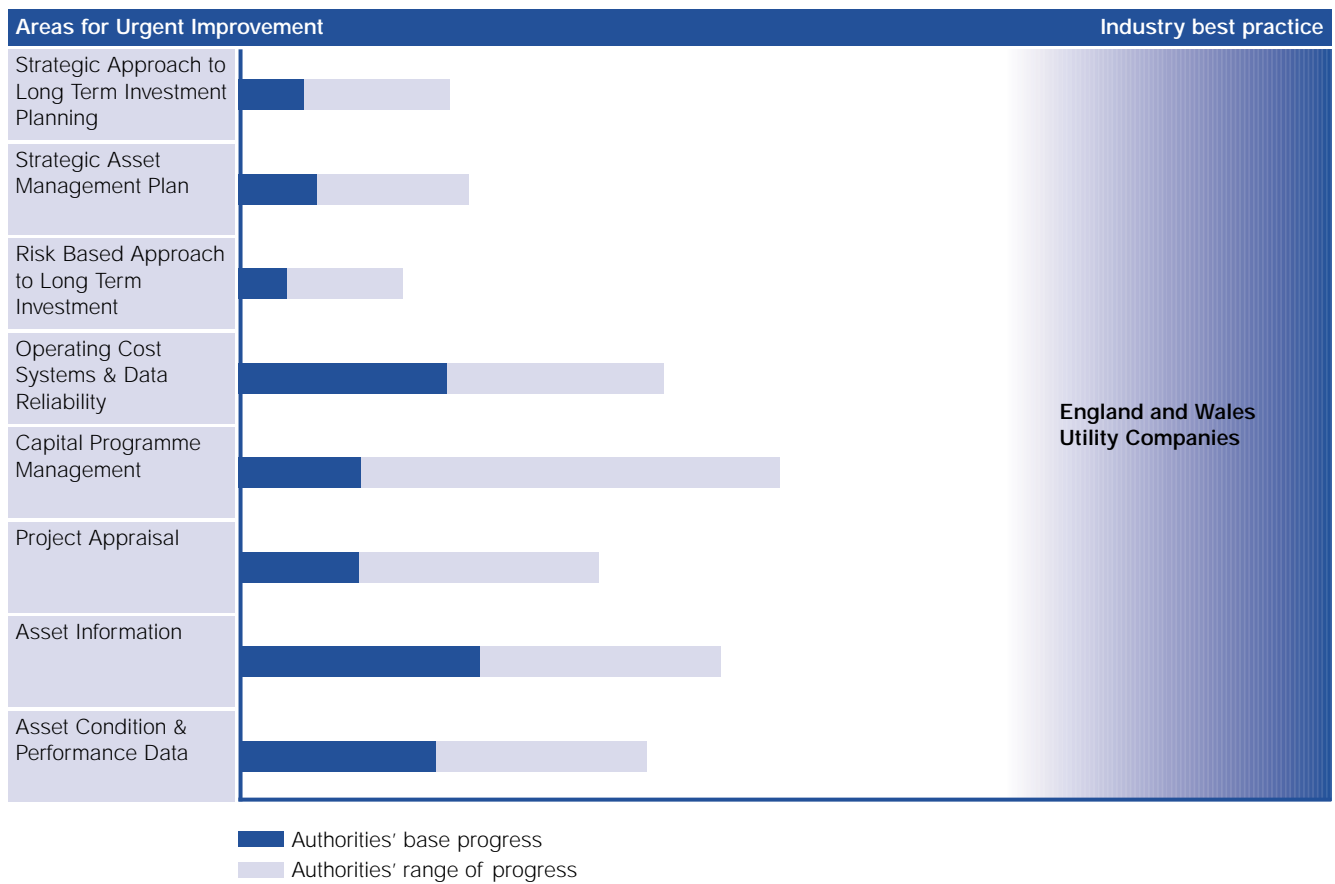
I use the data from my WIC Annual Return in a variety of analyses. For example, I calculate the operating efficiency targets based on information provided by each of the water authorities in Section E (operating costs) and Section A (base information).

I use the customer information from Section B for benchmarking purposes and to assess compliance with the Guaranteed Minimum Standards. The cost base data from Section J was central to my calculation of the capital efficiency target.

vi) Other key outputs

The project teams' initial meetings with the water authorities highlighted those gaps in information and in management

Figure 3.2: A view of the three authorities' position compared with industry best practice



processes that would impact on my annual information return. The authorities were compared with industry best practice across utilities in England and Wales. Where gaps were identified, I asked the authorities to prepare Action Plans to explain how they intended to address the gap and complete the WIC Annual Return.

The Action Plans span a period of four years. Some actions were short term (before April 2001), some are medium term (before April 2003) and others will take longer to address (before April 2005). The project teams identified those areas requiring urgent improvement based on the comparisons with industry best practice. Figure 3.2 is taken from their report.

The figure shows that the authorities fall considerably short of industry best practice, particularly in the areas of strategic long-term investment planning, strategic asset management and in adopting a risk-based approach to long-term investment.

I identified five areas for urgent improvement. The conclusions of the project teams are set out below, and I also outline

whether the authorities addressed these issues in their Action Plans. The five priorities were as follows:

- Investment and business strategy: development of robust strategic asset management and long-term investment planning.
- Financial management and control: improved systems for investment appraisal, project monitoring and allocation of operating costs.
- Asset management: availability of accurate asset information, condition and performance grades and risk profile.
- Service delivery: measures of levels of service and quality outputs.
- Information management: improved systems for collection and storage of information concerning properties and populations served, volumes supplied and loads treated.

vii) Investment and business strategy

Strategic asset management is a key skill for the water industry in Scotland. This area is central to all decisions about asset investment, and has to be a priority for management. A robust strategic investment plan is essential to any business. The

project teams found that robust strategic plans, which linked the investment programme and the operating environment of the authority, were not in place.

The water authorities' Action Plans did not fully address the weaknesses in strategic planning. However, it is clear that each of the authorities understood the importance of this area and is taking steps to improve.

viii) Financial management and control

- Project appraisal - the project teams were concerned about the level of scrutiny and challenge given by the authorities to projects as they pass through the appraisal stage. They found that the appraisals did not take a sufficiently wide view of all of the factors impacting on projects. It was noted that this was due in large part to the lack of information about assets and detailed costs.
- Project monitoring – this is essential to the achievement of outputs to time and to budget. The project teams found that the authorities either have procedures in place which ensure that directors are informed of progress at programme level and of any problems at individual project level, or are putting these plans in place.
- Operating costs – the authorities have the systems to allow detailed allocation of costs. These have not yet been fully exploited but the authorities are actively assessing the feasibility of collecting costs at a process and water supply zone level.

The project teams recommended that I set out guidelines for investment appraisal. These are now complete and an audit of a representative sample of schemes is currently underway.

Early results from my investment appraisal audits show that the authorities do need to make significant progress. It is encouraging that each of the authorities delegated a senior manager to the audit team. Clearly, management do see this as a priority.

ix) Asset management: asset information

A full and detailed understanding of the asset base is critical. This will take some time to develop in full, and it is important to begin this process as soon as possible. The authorities will

need to understand the condition, performance and risk of their assets at a detailed level. At the current time the definitions used by the authorities all differ slightly and their information is not complete. There is currently little information available at a detailed sub-asset level.

Understanding assets in this detail is essential to the planning of investment and to minimising operating costs.

The project teams recommended that:

- cost coding structures should be extended to provide sufficient disaggregation to meet regulatory requirements;
- risk-based techniques should be developed to assess risk levels for the assets the authorities operate or adopt;
- in the short-term, a suitable statistical methodology should be developed for filling gaps in asset data.

The authorities have defined a number of actions in their plans to improve the quality of their asset management. They have also agreed to introduce risk analysis to their investment appraisal.

The water authorities did not include in their Action Plans initiatives to improve their understanding in the area of asset condition and performance data. The authorities did, however, specify an asset project in the *European Journal* in March 2001. I believe that this project is a priority if we are to ensure proper management of the asset base.

x) Service delivery

- Output measures - the project teams found a mixed picture in this area. The authorities collect information on interruptions to supply, although there are some questions about the integrity and consistency of the information. The situation is much better in customer service outputs. The authorities are able to report on billing queries, complaints and telephone response times.
- Quality outputs - each authority is able to report statutory water quality compliance, but does not have direct access to SEPA information to report sewage compliance. The authorities are not currently able to assess risk of non-compliance for water treatment works on the basis described in my reporting requirements. A risk measure is,

however, needed to justify and target renewals expenditure. The risk of non-compliance at sewage treatment works is more difficult to establish. Neither SEPA nor the authorities monitor discharges at all sewage treatment works.

xi) Information management

- Information systems - the review disclosed that there are major gaps in the extent, consistency and quality of information required to run the business and for regulatory reporting. Problems have been encountered because of:
 - multiple legacy systems,
 - inconsistent definitions and references,
 - lack of business ownership of data leading to inadequate maintenance/update.
- Population and properties - domestic property total numbers are taken from local authority information. The quality of this data is not known. The water authorities are attempting to work with the local authorities to check the available information. All properties where the water authority is responsible for billing are classified as non-domestic. This will include some domestic premises that have a meter. The water authorities are at different stages in improving their customer information.
- Volumes and loadings – the water authorities need to understand the amount of water they produce and deliver to customers. Efforts have been made to understand water use by domestic customers and metered non-domestic volumes are available. There is no reliable information on water use by non-metered non-domestic customers. The water authorities do not collect information on the total amount of water put into supply. There is also no reliable information on the quantity and load of sewage volumes collected for either the domestic or non-domestic sectors.

The project teams recommended that:

- an Information Strategy is produced to provide the high-quality information essential to run the business;
- continued efforts should be made to improve the quality of the information relating to population and properties;
- significant work is required to improve the measurement of inputs and outputs to ensure accurate water balance information.

The three authorities have made considerable progress on improving their population and property information. However, they have made little progress on water balance information, although they have put plans in place to achieve a better understanding of water volumes.

xii) Information Project benefits

I believe that this initiative has been critical to the development of good quality regulation and my role in promoting the customer interest. I have been able to gain a good understanding of where the water authorities have to increase their knowledge. I hope that my information requirements will help them to run their business more efficiently. The Action Plans help me to make judgements based on the regulatory return.

I intend to continue to work with the authorities to increase the effectiveness of the Action Plans and to continue to improve the information available to management and for regulation.

The authorities have made considerable progress in improving the quality of their annual return information. The return, which was submitted in June 2001, was a marked improvement on the earlier dry runs. I do believe, however, that progress on asset quality information is required quickly in order properly to inform the next Quality and Standards process. This is urgent and the authorities cannot afford to delay.

The Information Project has been invaluable in ensuring that the information that I needed to complete this Review was available. The information has enabled thorough benchmarking and quality monitoring to be completed. My office is also now able to compare the data with Ofwat information on the English and Welsh companies.

The annual return has also been essential to the analysis of the potential for capital efficiency and the setting of appropriate targets.

b) Water Industry Commissioner letter process

In writing this Review, I have also found it necessary to collect other information that is not yet collected in the annual return. I do this through a series of letters addressed to the water authority Chief Executives, each of which is assigned a code (e.g., WIC 1) for ease of reference.

Table 3.2 summarises the content of the letters issued to date.

Table 3.2: Water Industry Commissioner letters

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 will be 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 will be used to monitor revenue from households and will aid 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 – my 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 the WIC – clarification on timing and content of my information requirements following on from the Information Project.
WIC 9	Non-domestic Debt Analysis – request for analysis of non-domestic debt figures to allow me to monitor the financial impact of debt levels and assess the efficiency of the authorities' collection systems.
WIC 10	Information Project Action Plan – my feedback to authorities on the content of their Action Plans.
WIC 11	Not used.
WIC 12	New Opex and Spend to Save – my criteria for assessing the water authority's case for additional expenditure on new opex 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 Sewerage 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 my office.
WIC 18	Q and S Final Output – project level information to be included in Quality and Standards process.
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 the proposed 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.

These WIC letters have been reproduced in Appendix F.

Section 2: Chapter 4

Methodology: Other Important Inputs to the Strategic Review

a) Introduction

Chapter 3 discussed the system of regulatory returns and letters that I established to enable me to draw effective comparisons. A number of other inputs have been fundamental to this Review:

- Review of techniques used by other regulators in assessing efficiency targets – I concluded that the Ofwat methodology was applicable to Scotland.
- Quality and Standards process – an 18-month intensive effort designed to define the levels of investment required to ensure a sustainable water industry. This included the investment required to meet public health and environmental standards and the investment required to maintain the asset base properly.
- Capital Maintenance Planning Initiative – this was an important input to the Quality and Standards process. The investment expenditure of the water authorities had been insufficient properly to maintain the underground network of pipes. This was an issue highlighted in my interim Review. This initiative was designed to identify the required levels of maintenance on underground infrastructure.
- Transport and Environment Committee Report¹ – I took full account of the view expressed by this Committee's inquiry into the water services industry. I noted their recommendations for the industry.
- Public expenditure – I have taken full account of the letter commissioning this Review. In this letter, Ross Finnie, MSP, instructed me to ensure that public expenditure constraints were not breached. I have tried consequently to phase investment and price increases in order to ensure that there is a margin between the public expenditure constraint and the actual need of the industry.

b) Review of the techniques used by other regulators

I have studied the methodology employed by other regulators to ensure that the efficiency targets imposed on the Scottish

water authorities are appropriate, fair and robust. I have noted the substantial efficiencies that have been made in other industries. I wanted to understand the methods used in achieving these improvements. I have, therefore, sought to adopt any successful techniques. The key tool used by other regulators is benchmarking. Comparison is very useful both in determining an answer and in convincing management that the answer is correct.

My review suggested that the Ofwat methodology of calculating efficiency targets was applicable to the Scottish water industry and that this method had been subjected to extensive external scrutiny and was both comprehensive and reliable. The techniques used by other regulators, notably Ofgem and Oftel, are designed to take account of more developed competitive markets. I believe that they may be more relevant in the future. I have however used a modified version of the Ofwat process to inform this Review. I have modified the Ofwat approach only to take account of the different situation in Scotland, both in terms of the industry's ownership and asset structure.² The advantage of this similar process is that the Scottish industry is being judged against its most likely competitors.

i) Operating expenditure

Ofwat's principal tool for determining relative operating efficiency is econometric modelling. Ofwat's suite of models, detailed in Chapter 7, is designed to benchmark various aspects of each of the English and Welsh companies' service against the best performers in the industry. This technique contributes to the creation of individual efficiency targets. Ofwat will, however, always try to ensure that companies are given sufficient incentive to exceed the target imposed.

I have used a modified version of Ofwat's models to assess the efficiency gap between the Scottish industry and the best performing comparator companies in 2005-06. I have tried to set a reasonable target based on the result of the models, the customer's need for affordable charges, and the capability of management to achieve the target. The results are set out in Chapter 18.

ii) Capital investment

I have also applied the Ofwat cost base technique as a basis for calculating capital efficiency targets for the Scottish

¹ 21 June 9th Report, 2001: Report on Inquiry into Water and the Water Industry.

² As Scotland has a large number of small treatment works, I had to adapt the Ofwat methodology (see Chapter 7). The information requirement also had to be adjusted to take account of Public Private Partnerships.

authorities. I have extended the Ofwat methodology to look at the capital investment process as a whole.

Efficiency improvements are required across four broad areas, and these are set out in Chapter 19. The extent of improvement required in each area has been determined from quantitative sources, such as cost base analysis adopted from Ofwat, and from qualitative information.

c) Quality and Standards process

i) Background

The Quality and Standards process is designed to set out the standards of drinking water quality and environmental protection that the authorities need to meet, and the associated costs. This prioritisation of the investment programme is disciplined and made more rigorous by requiring a consensus of all key stakeholders in the Scottish water industry. These stakeholders are:

- The Scottish Executive – has overall responsibility for the policy and regulatory framework for the water industry and is also responsible for ensuring compliance by the water authorities with specified drinking water quality standards.
- SEPA – is responsible for ensuring that the water authorities comply with statutory environmental protection standards set mainly by the European Union.
- The Water Industry Commissioner for Scotland – is the customer services and economic regulator of the water authorities.
- The water authorities – must plan, maintain and operate the water supply and sewerage service for their customers.

ii) Quality and Standards: options

Investment can be divided into those elements where there is little or no discretion and elements which, at least in the short to medium term, do offer choices. The Quality and Standards process sets out to document the investment required to ensure compliance with environmental legislation and public health standards. No less important is the focus on investment required to ensure that the infrastructure that provides the service is maintained and refurbished appropriately.

The Scottish Executive published a consultation document entitled *Water Quality and Standards 2002-06* in January 2001 that set out clear options for the water authorities' capital spending programmes. Customers were asked to consider their preferences for the future priorities of the water authorities. These include the trade-offs between meeting standards by long-term measures such as building new and improved plants or more temporary measures such as increasing operational costs and/or further patching up existing treatment plants. The quick-fix method may be cheaper in the short term but is certainly more costly in the long run. The Quality and Standards process also highlights decisions regarding the speed with which underground assets are replaced, and takes account of the current backlog and performance of the networks.

The consultation document offered a choice of three options.

- Minimum option - this meets the standards set by regulations on water and sewerage treatment. This option has low-cost capital solutions but does not address the running cost implications of having to manage deteriorating existing assets, such as treatment plants, water mains, and sewers.
- Central option - this meets the legal standards and makes some improvements to the assets, although only investing enough in the underground infrastructure to prevent further deterioration.
- Enhanced option - this allows substantial progress towards modernising all assets. It is also the only option that includes significant resources for removing development constraints, and first time connections.

The water authorities agreed the projects required to deliver the outputs of each option with the quality regulators and calculated the likely costs. These are set out in Table 4.1.

Table 4.1: Overall level of investment (£ millions) 2002–03 to 2005–06

	Minimum option	Central option	Enhanced option
East	£420m	£500m	£710m
North	£640m	£790m	£1,150m
West	£700m	£920m	£1,150m
Total for Scotland	£1,760m	£2,210m	£3,010m

The consultation document also made an attempt to ensure that customers understood what this investment would mean in terms of water charges. Table 4.2 provided a useful indication of the cost implications of each of the minimum and enhanced options when compared with the central option.

Table 4.2: Approximate difference in average domestic charges, compared with central option

	Average domestic charge 2000–01	Minimum option	Enhanced option
East	£184	£20–£30 lower	£60–£70 higher
North	£237	£50–£60 lower	£100–£120 higher
West	£169	£30–£40 lower	£50–£60 higher

iii) Quality and Standards: consultation

The consultation document set out the options for investment and invited responses.

In particular, responses were invited on the following questions:

- Which option achieves the best balance of costs and benefits?
- Should the same standards apply throughout Scotland, even though this would mean markedly different charges in different areas?
- At what speed should underground pipes be renewed? Past under-investment has left a major backlog. The more money invested, the less the risk of the system breaking down and leading to a poorer service to customers. Are customers prepared to accept a higher risk of such interruptions to enjoy a lower bill, at least in the short term?
- At what rate should highly desirable spending which is not actually mandatory take place, e.g. removing development constraints and first time connections to the water and sewer network in rural areas?

Comments on the issues and proposals had to be received by the Scottish Executive by 30 March 2001.

iv) Quality and Standards: results of the consultation

There were 40 responses to the consultation paper. These were principally from local authorities and environmental organisations. Despite the potential for lower charge levels under the minimum option, only 5% of respondents supported

the minimum option. Some 42% (including 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 under-investment 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 53% (including the three water authorities and the Water Industry Commissioner) supported the central option.

The lack of support for the minimum option pointed to the choice lying between the central and enhanced option.

The Scottish Executive has concluded that the balance between sustainable improvements and cost to customers means that the central option is the more attractive option. There was a difficult balance to be struck between the impact on customer charges and the undoubted benefits of the enhanced option. In the end a compromise was reached, which included within the finalised central option some extra investment to help ease the constraints on new developments, and to allow first time sewerage provision in rural areas. The final costs, as published in the final paper in August 2001, are shown in Table 4.3.

Table 4.3: Final paper overall level of investment (£ millions) 2002–03 to 2005–06

	Central option
East	£530m
North	£810m
West	£1,000m
Total for Scotland	£2,340m

My advice on revenue caps takes full account of the investment required to achieve the outputs of the improved central option. I have, of course, applied capital efficiency targets to the water authority's costings of investment required. My methodology to assess the scope for capital efficiency is discussed in Chapter 8.

d) Capital maintenance planning

i) Importance of capital maintenance

Proper maintenance of the underground assets is essential to delivery of improved quality and standards. Investment in

treatment plants will not deliver its full potential if the distribution and collection networks are not properly maintained. Customers require services to be available 'on demand' and at reasonable cost. This can only be achieved by planning expenditure to address infrastructure maintenance pro-actively. The management of assets in Scotland is complicated by the relatively poor quality of information available. I am keen, however, to see capital maintenance prioritised and to ensure that the lack of information does not become a justification for inaction.

ii) Role of the Water Industry Commissioner for Scotland

The water authorities assess the costs of the quality and growth investment in the Quality and Standards process independently. The extent of this investment is agreed between the quality regulators and the water authorities. The situation with capital maintenance is quite different. There is a clear customer interest in ensuring that responses by the water authorities to actual or perceived funding constraints do not store up problems for customers later. This is particularly relevant to the underground infrastructure, which accounts for some three-quarters of the value of total assets. There is a significant risk that if there are no clear targets for maintaining these critical assets, then pressure to meet budgets could lead to unreasonable delays in investing in their maintenance. It is easier to store up problems in this area simply because the underground assets cannot be seen. I have therefore sought to ensure that the water authorities are paying full and proper attention to maintaining their underground assets. I have taken this into account in my Review.

iii) Methodologies applied by water authorities

The Scottish Executive asked that a serviceability approach to customers should be adopted for the central option in Quality and Standards. In addition, it was agreed that the level of maintenance by the authorities should be ramped up over the four-year period to reach the equivalent of a long run normative charge. This long run normative charge is the cost of maintaining the infrastructure in its current condition. It is defined as the modern equivalent asset cost³ divided by the average life expectancy of the assets.

The authorities have used differing methodologies to assess their requirements for capital maintenance investment. This is at least in part a result of the availability of information. East of

Scotland Water Authority used information from its Integrated Network Management System. Its focus was principally on performance measures. West and North of Scotland Water Authorities modelled requirements based on estimated lives of infrastructure. This was based largely on information about the condition of assets. However, they each used different methods to calculate their investment requirement.

The development of integrated network management strategies and asset management programmes has already improved consistency across each of the three authorities. There should be a fully consistent approach in place by the next Quality and Standards process.

iv) Ofwat approach

My starting point to assessing the capital maintenance requirement of the authorities was to examine the Ofwat approach.

The current Ofwat framework for both above and below ground maintenance is based on a four stage approach, as follows:

- Serviceability assessment – a review takes place of the trends in performance of the asset systems in delivering services to customers using 11 indicators. These indicators show whether the trend was improving, stable, deteriorating or marginal.
- Consider future period – Ofwat then considers what could be different about the next period that might necessitate changes in typical levels of activity.
- Consider scope for improvements in efficiency – Ofwat uses cost base analysis and econometric modelling to determine the scope for efficiency.
- Assessment of the impact of the quality improvement programmes on normal capital maintenance programme.

I believe that the Ofwat approach is robust and would intend to use it in Scotland in the future. However, there is currently insufficient information available to use this approach. Specifically, there is no trend data and no opportunity to use the econometric models.

v) Initial approach

In May 2000 I asked the authorities to submit information on the condition profiles of their mains and sewers. The responses

³ The gross replacement cost of the water mains and sewers with modern equivalent assets. According to Ofwat's Information Note 35A in March 2000, the average for water mains is £120 per metre and for sewers £345 per metre.

are recorded in Table 4.4. The profile for each authority is worse than the average in England and Wales. This is particularly true in the North, where two-thirds of the water mains are in Condition Grades 4 and 5. Condition Grades 4 and 5 mean that on average the assets are within 10-15 years of the end of their expected life.

I subsequently developed two separate models to establish sustainable scenarios of infrastructure management and replacement. These models introduced varying degrees of risk.

My first method was to model the deterioration of assets over time. The model assumes that Grade 4 and 5 assets are replaced by Grade 1 assets. I designed the model to provide an annual required investment to ensure that the condition and performance of the underground assets remained acceptable.

I established two profiles for expected life of the assets and three profiles for the rate of deterioration of the asset. The two profiles for the expected life of the assets are 66 and 80 years for water and 80 and 100 years for sewers. The three profiles for the rate of deterioration are set out in Table 4.5.

My second model assumes that a certain asset depreciation charge is required each year to be able to replace the asset at the end of its life. It additionally sets up a methodology to bring current asset profiles into line with what would be more desirable. This essentially models a 'market' or cost estimate for the 'replacement to a desired level' for infrastructure assets. In this

market, I valued assets at a percentage of their full replacement cost value (£120,000 per kilometre for water mains and £345,000 per kilometre for sewers) depending on their declared condition grade. My percentages are set out in Table 4.6.

Table 4.6: Breakdown of underground asset stock by Condition Grade

Condition Grade	Water	Waste water
1	100%	100%
2	70%	70%
3	40%	40%
4	10%	10%
5	0	0

I assumed that the current profile of assets can be improved to match the desired profile for a price, which will reflect the costs of improving the current profile to the desired profile. I did not therefore have to replace old with new. This model therefore attempted to model practical reactive maintenance rather than replacement of catastrophic failure.

I ran sensitivity options through each model, introducing alternative lifespans for assets.

In August 2000 I submitted a paper to the Scottish Executive on the cost implications for customers of the necessary programme for maintenance and replacement of infrastructure. This paper described the results of these models.

Table 4.4: Condition profile of water authority mains and sewers

	East		North		West		Ofwat average	
	Water	Waste water	Water	Waste water	Water	Waste water	Water	Waste water
Categories 1-3	66%	88%	34%	71%	73%	68%	88%	90%
Categories 4-5	34%	12%	66%	29%	27%	32%	12%	10%

Table 4.5: Deterioration of water authority assets

Expected life (years)	Deterioration	Grade 1	Grade 2	Grade 3	Total (years)
66	Accelerated	13	20	33	66
	Even	22	22	22	66
	Slow	33	20	13	66
80	Accelerated	15	25	40	80
	Even	27	27	26	80
	Slow	40	25	15	80
100	Accelerated	20	30	50	100
	Even	33	33	34	100
	Slow	50	30	20	100

vi) Revisions

The conclusions of my paper on the maintenance and replacement of infrastructure were broadly equivalent to the infrastructure needs outlined in the enhanced option in Quality and Standards.

In order to calculate the cost of the central option, I revised a number of assumptions applied in my initial approach.

- I assumed a longer average life for critical sewers (120 years) but kept water unchanged. It could be argued that there are examples of pipes and sewers that have lasted much longer than these averages. However, they are averages and as such must also take into account assets which fail quickly, e.g. asbestos cement pipes.
- I set expenditure to maintain (rather than improve) the current profile.
- The modern equivalent asset cost was taken from the authorities' own information where possible.
- I assumed that the policy on maintenance of non-critical sewers would be reactive, as is the case in England and Wales, and not planned.

The results of the analysis are shown in Chapter 15.

The long run normative charge is increased because there is currently a disproportionate amount of infrastructure in Condition Grades 4 and 5. This reflects the extra reactive maintenance required. The normative charge will drop when the Grade 4 and 5 assets are replaced and the average condition and performance of the assets improves. It is therefore expected that the spend on infrastructure over the Quality and Standards period of 2002-06 is slightly higher than the very long-term average.

vii) Industry developments

There were significant differences between the estimates of capital maintenance from the companies and the determination of Ofwat during the 1999 Periodic Review in England (AMP3).

As a result of recent criticisms of the approaches of the industry and of Ofwat to capital maintenance planning, UK Water Industry Research (UKWIR) has commissioned an engineering services consultancy group to develop a common framework for capital maintenance planning within the UK water industry. Ofwat, the Drinking Water Inspectorate, the Environment Agency, the Water Industry Commissioner for Scotland and the Department for Environment, Food and Rural Affairs (DEFRA) are all supporting this initiative. A key deliverable will be the development of proposals for improved 'serviceability indicators' for the performance of the distribution and collection infrastructure. It is hoped that these indicators will reflect the service provided to customers and the impact on the environment.

I was keen to participate in this initiative since I believe that it will be equally applicable in Scotland. Until the asset data in Scotland improves and these output measures are clearly defined, the Scottish Executive has advised that the authorities' maintenance of infrastructure should be monitored on the basis of the length of mains or sewers renewed. Credit will be given where the authority can demonstrate that a more cost-effective solution to renewal is found, for example by installing pressure valves. These outputs are to be delivered within the capital investment budget available to the authorities. I will monitor both spending on and delivery of these outputs.

e) Transport and the Environment Committee

The remit of the Transport and the Environment Committee includes a duty to consider and report on matters relating to the environment and natural heritage, which fall within the responsibility of the Minister for the Environment and Rural Development. Given the unprecedented challenges facing the water industry in Scotland, the Transport and the Environment Committee signalled, in May 2000, its intention to carry out an inquiry into water and water services.

Prior to making its recommendations to Parliament, the Committee took oral evidence over eight sessions from 23 organisations with a special interest in the water industry. It also received 45 written submissions. The outcome of the inquiry was the production of a series of recommendations designed to create a sustainable, customer-focused industry. These recommendations have been noted and taken fully into account in the preparation of this Review.

f) McFadden Report

The Scottish Charity Law Review Commission, chaired by Jean McFadden, was appointed in March 2000 by the Deputy First Minister, Jim Wallace, with the remit of reviewing the law relating to charities in Scotland and to make recommendations on any reforms considered necessary. After extensive consultation with individuals and organisations throughout Scotland, the Commission presented a total of 114 recommendations to Scottish Ministers. One of its recommendations related to the issue of the reliefs provided to charities in respect of water charges. The report does not suggest how this relief should be funded. I have noted this conclusion and the view of the Transport and the Environment Committee in my discussion of charitable reliefs in Chapter 25.

g) Financing costs initiative

i) Review of financing costs

I have studied the debt of each of the three authorities. My revenue caps take full account of existing embedded debt. Embedded debt is the long-term debt of each authority, which carries a fixed coupon and is currently outstanding. There would be no benefit to using customer money to restructure the high coupon debt, as the net present value of this transaction would be zero. This would not compare favourably to the return on new asset investment, which is higher than the current cost of finance.

I have also reviewed in some detail the cash management of the authorities and the current credit markets. I identified opportunities for them to reduce their funding costs and my price limits have taken account of this.

ii) Comparisons with England

I have compared the cost of financing with England and Wales. This comparison shows that there is little difference between the current weighted average cost of capital of the authorities and that of the privatised companies. The cost of capital in Scotland should reduce significantly in the next few years as embedded high coupon debt matures and is replaced by new, cheaper borrowing.

iii) Assessment of lessons from Glas Cymru

I also compared the funding of the new not-for-profit company limited by guarantee, which has been established to manage the water service in Wales, with the Scottish public sector. I found that this company has a focused strategy and has benefited from a much lower net cost of capital than the rest of the private sector in England. The gross cost of capital is broadly equivalent to that currently available in Scotland. I believe that there are important lessons to be learned from Wales, but these are more about the risk of other non-regulated activities than any financing advantages that could be available to Scotland.

iv) Choice of financial ratios

I have reviewed a number of financial ratios and have concluded that a ratio of free cash flow (defined as operating cash flow minus maintenance investment expenditure) to interest payable is the most appropriate. This ratio will ensure that there is always an appropriate link between the costs of funding the authority and the money available to meet interest payments. Maintaining this ratio at a sensible level will ensure that the industry in Scotland is able to respond effectively to 'shocks' without large sudden increases in charges. My review of the equivalent ratio in England and Wales would suggest that interest cover in Scotland is not as healthy as would be desirable. I cannot allow this ratio to worsen substantially if there are not to be extra risks for customers. I have calculated the revenue cap in this Review in line with this prudent approach.

h) Public expenditure requirement

i) Assessment of impact public expenditure has on the customer

Public expenditure is made available to the water authorities. This is measured according to a resource budget allocation, which is designed to measure the actual resource cost of the water authorities on the Scottish budget. In practical terms, it allows the water authorities to borrow in order to supplement the income that they receive from customers. The significant increase in investment, even after I have adjusted the timing of projects, requires both an increase in charges and full use of all of the available public expenditure.

I have therefore focussed on ensuring that there is a sustainable balance between revenue and future investment by the end of this regulatory period. The proposed increases in charges will, if the efficiency targets are met in full, achieve this goal.

ii) Safety net created by not using full requirement

I recognise that if the performance of the water authorities in achieving their efficiency targets were less good than I expect, this would have an impact on the public expenditure requirement. I have taken this into account in my advice on revenue caps and have left an appropriate margin for contingencies. I have completed a full risk analysis (described in Chapters 33 and 37), which shows that I have struck a sensible balance between charges and the public expenditure requirements. The risk to both is minimised if management focus on their efficiency targets.

Section 2: Chapter 5

Methodology: Customers

a) Introduction

In this chapter I outline in more detail how I set out to understand the priorities of customers.

My approach has combined five elements:

- consultation with customers and representative groups,
- quantitative research,
- review of complaints received by my office,
- audits of customer service with the water authorities,
- other customer-focussed initiatives.

I will address each of these in turn.

b) Consultation with customers and representative groups

i) Consultative Committee meetings

The Water Industry Act 1999 required the establishment of a Consultative Committee for each of the three water authority areas. The role of these committees is to advise me on the promotion of the interests of customers of the three water authorities. Had it not been a requirement of the Act, I would still have looked to develop a similar opportunity to consult, as extensively as possible, at a local level. I chair each committee, which consists of seven members. I appointed a deputy chairman to assist me in realising the potential of this initiative.

The committees meet regularly in public, throughout Scotland, and by the end of March 2002 there will have been 14 meetings in each water authority area (see Appendix E). In addition, each committee has undertaken to meet up to 50 community groups during each year to carry out more direct consultation (see Appendix E).

These meetings provide an invaluable insight into the concerns of customers. One of the advantages of the committees is that they are able to discuss, one customer to another, issues in the water industry. They are not hindered by the accepted wisdom within the industry. The views that I receive from their thorough consultations have been most useful. In many cases I have found that the issues raised in these public meetings are broadly similar to the concerns of customers who contact my office with complaints. This reinforces the lessons that I learn from these complaints. It is valuable to meet affected customers

first hand and I hope that real benefits have been received by many of those who have come to the meetings.

ii) Large User Group

I set up a Large User Group in May 2000, in order to understand the specific concerns of this group of customers. I also intend to use this group to monitor the standards of service received by large users from the water authorities.

For the purpose of this group I defined a 'large user' as a customer who uses more than 100 million litres of water annually, or who uses the equivalent in waste water or trade effluent services.

I selected the members of the group from all three authority areas. I tried to ensure that there was a good mix of organisations represented. I deliberately chose some of the biggest of the large users and some who are not far above the threshold. Public and private sectors are also represented.

I have arranged three meetings of the group to date. These meetings take place approximately every six months (July 2000, November 2000 and May 2001). I invited Neil Menzies, who has a background in the chemical industry, to act as Chair of the group (the views of the group are reported in Appendix E).

The members of the Large User Group are as follows:

Table 5.1: Members of the Large User Group

Company	Water authority area
Allied Distillers Ltd	West
Baird Malt Ltd	North
BP Amoco Ltd	East
British Energy	East
Caledonian Paper plc	West
Donside Paper	North
Esk Frozen Foods Ltd	North
Motorola Ltd	East and West
North British Distillery Co Ltd	East
Scottish Courage	East
Scottish Universities	East, North and West
Southern General Hospital NHS Trust	West

iii) Individual meetings with large users and other interested parties

In addition to the Large User Group, some large companies or organisations have requested individual meetings with me to discuss their views on the service provided by the water authorities. This has been an opportunity to try to resolve any issues raised. These meetings always provide a useful insight into the customer experience, and in many cases have influenced my work on service level initiatives.

Table 5.2: Dates of meetings with large users and other interested parties

Date of meeting	Large user
December 1999	BP, SmithKline Beecham
January 2000	SmithKline Beecham
May 2000	Herring Buyers Association
May 2000	Aberdeen Fish Curers and Merchants Association
May 2000	Aberdeenshire Council
May 2000	Aberdeenshire City Council
May 2000	Moray Council
June 2000	Scottish University Joint Committee
December 2000	Shepherd and Wedderburn
January 2001	COSLA
May 2001	Forth Valley Enterprise
June 2001	Shepherd and Wedderburn
July 2001	BAA

iv) Wider consultations with non-domestic customers

I also initiated a series of meetings with a number of representative organisations and trade associations in order to understand the views of the non-domestic sector. My office designed a questionnaire to help these organisations gather information and views from their members. This was useful in focussing my discussion with these organisations on the areas of principal concern for their members. My initial intention was to consult these groups on an annual basis, but in many cases it has been useful both to me and to the organisation to meet more frequently.

The responses to the questionnaire were analysed to reveal the general views of the non-domestic sector. Some of the most frequently expressed views are presented in later chapters of this Review.

The following organisations took part in the non-domestic consultation:

- CBI Scotland
- Chemical Industries Association
- COSLA
- Crofters Commission
- Dundee Chamber of Commerce
- Edinburgh Chamber of Commerce
- Federation of Small Businesses
- Highlands and Islands Enterprise
- Institute of Directors
- National Farmers Union
- Scotch Whisky Association
- Scottish Building Employers Federation
- Scottish Consumers Council
- Scottish Engineering
- Scottish Enterprise
- Scottish Landowners Federation
- Scottish Tourism Forum

v) Panel of academics

I established a panel of leading academics to advise me and provide a 'sounding board' for initiatives. In particular, I was keen that they should cast an informed but independent eye over my analysis of the industry.

There were three issues that I was particularly keen to discuss with these academics. These were the efficiency targets; incentives and corporate governance; and affordability. These issues were discussed at three meetings in my offices in May, June and July this year.

The following academics make up the panel:

- Professor Tony Prosser, from the School of Law at the University of Glasgow.
- Dr John Sawkins, from the Division of Economics in the School of Management at Heriot-Watt University.
- Professor Bill McInnes, Professor of Accounting in the Department of Accounting, Finance and Law at the University of Stirling.
- Professor Brian Main, Professor of Economics in the School of Management and Director of the David Hume Institute at the University of Edinburgh.

vi) Domestic Forum

I was conscious that I had to understand the issues facing the most vulnerable customers. I was concerned that the view of these vulnerable customers may not be heard either through public meetings or through my programme of quantitative research. I therefore decided that I would need some help in assessing the views of those who are directly involved in trying to provide assistance to the vulnerable. I therefore asked Esther Robertson, former Co-ordinator of the Scottish Constitutional Convention, to assist me in contacting as many groups involved in working with the vulnerable as possible.

I am grateful to the following organisations that make up my Domestic Forum. Their views have helped me gain an insight into the issues faced by vulnerable customers and assist me in writing Chapter 24 of the current Review (the views of the Forum are reported in Appendix E). I hope that the work begun by this Forum can continue and will have a positive result.

The following organisations make up the Forum:

Age Concern
 Child Poverty Action Group in Scotland
 Citizens Advice Scotland
 COSLA
 Dundee Anti Poverty Forum
 Dundee City Council
 FLOW, Tayside
 Highland Advice and Information Network (HAIN)
 Heriot-Watt University
 Lothian Anti Poverty Alliance
 The Poverty Alliance
 Scottish Consumer's Council
 Scottish Local Government Forum Against Poverty
 SCVO

c) Quantitative research

In order to obtain a more quantitative reflection of customer priorities I established the 'Water Panel'. The panel has a total of 2,250 members, with 750 from each water authority area. Panel members were selected by an independent market research company (TL Dempster Strategy and Research) broadly to represent the population and demographics of Scotland.

Two postal surveys have been carried out, the first in October-November 2000, and the second in March-April 2001. TL Dempster compiled the survey questionnaires and then analysed the results (these are summarised in Appendix E).

The first survey gathered information on:

- customers' awareness of who provides water and sewerage services,
- customer satisfaction with the service provided,
- customers' views on the most important issues facing the industry,
- customers' views on charges,
- customers' investment priorities.

A number of interesting insights arose from the first panel survey. I therefore commissioned a number of focus groups to establish a more in-depth, qualitative picture of customers' views.

One of the advantages of a customer panel is that there are opportunities to ask the same general question on a number of occasions. This allows me to understand how the views of customers are changing over time. The second survey therefore included some of the same questions to allow me to track changes in the panel's views.

However, the principal focus of the questions was on the following issues:

- customer contact with the water authority;
- competition and comparison with other utilities;
- charges, billing and affordability issues;
- investment priorities.

The results from this panel gave me a good insight into the views of domestic customers throughout Scotland. Their views have been important to me in completing this Review. Much of this document refers directly to responses to questions received from my panel.

The panel is useful because more than 80% of the panel have never had a reason to complain about their water or sewerage service. This means that their view should be broadly typical. The panel is also a mechanism by which I can access the views

of people who may not want to come to a Consultative Committee meeting.

d) Review of complaints

I reviewed the complaints that I have received from domestic and non-domestic customers. In a few cases, the complaint is not fully justified but in the overwhelming majority of cases there are significant issues raised. I believe that I have learnt from customer complaints in several ways. These include:

- the issue raised in the complaint,
- the way in which the authority initially responded,
- the final outcome of the complaint.

I have found that in many cases it is the initial response of the authority (rather than the original reason for complaint) that caused the complaint to be referred to me. Although there are not many complaints relative to the number of customers, lessons can be and are learned. These complaints do influence much of our work on developing customer service standards.

e) Quality performance audits

In 2000, I introduced quality performance audits, to measure Guaranteed Minimum Standards and compliance by the water authorities with their Codes of Practice. Each audit reviews 40 randomly selected cases and the quality of the response provided to the customer. These quality performance audits are an objective review of the service actually received by customers.

Any measurement and monitoring system must be fair and transparent. I therefore developed a clear set of definitions and an audit checklist. These definitions and checklist are used for each audit. This should help to ensure consistency and fairness.

General quality performance audits of complaints requiring a written response are carried out every three months. I have also introduced a more focused, specialised audit to study a particular area where performance appears to have been weaker and to identify scope for improvement. I use the objective criteria of the checklist in conducting either the

general or specialised quality performance audits. There is a clear yes or no outcome for each of the criteria in the checklist. These criteria include:

- Are the customer's details correct?
- Does the response answer the complaint?
- Is the response in plain English?
- Is the response customer friendly?
- Does the response contain an apology (if appropriate)?

I have also introduced telephone audits. The majority of complaints are by telephone, and I felt it important to monitor the quality of call handling within the water authorities. I established similar rigorous and objective measures on the checklist for the telephone audits.

Calls are measured against criteria including:

- Did the call-handler give his own name?
- Did the call-handler ask the customer's name?
- Did the call-handler ask appropriate questions?
- Was the call-handler friendly?
- Was unnecessary jargon avoided?
- Was there an offer of help?
- Was the customer thanked for calling?

These criteria ensure that an objective assessment of performance is possible.

These audits have provided useful information for this Review. The results have certainly influenced my view on the desirability of tightening customer service standards further. I believe that the results have also further reinforced the need to ensure that price increases are kept as low as possible. I will continue to monitor service standards and will expect them to improve during this regulatory period. The efficiency targets have been set at a level that assumes this improvement.

f) Other customer-focused initiatives

I have also studied issues concerning billing, the development of service levels in other utilities and the relationship between the revenue cap and the impact on prices. I describe each of these below.

i) Customer charges

I have compared price levels in England and Wales and in Scotland. In order to compare non-domestic charges, I compared the impact of tariffs on typical businesses. In most cases, the composition of charges faced by an organisation should be broadly similar to one of these case studies, although inevitably the size of bill will vary. I have compared domestic charges by using an average charge for the area.

Three of my WIC letters are particularly relevant to developing an understanding of the charges faced by customers. WIC 1 is about charges paid by non-domestic customers. The aim was to monitor the impact of competition or declining water use. Unfortunately, this information is not yet fully reliable. I have also not yet had responses to my WIC 4 letter. This asked for information about outstanding debt amongst domestic customers. This debt was to be divided by Council Tax bands and whether the debt was from someone in receipt of full, partial or no Council Tax benefit.

I have received responses to my WIC 9 letter on non-domestic debt. This has influenced my views on bad debt, direct billing of domestic customers and responses to competition.

ii) Lessons learned from other utilities

I believe that I can learn from the progress that other utilities have made in improving levels of service. I have therefore reviewed all of the publications issued by the other utility regulators and consumer watchdogs in framing this advice.

My staff and I have also had a number of meetings with the privatised water companies in England and Wales and with the electricity and gas companies. These sessions have been useful in confirming that most of these companies have experienced the same issues as those currently faced by the water authorities in Scotland. These companies have clearly met the challenge of improving customer service and efficiency, but they were not always successful immediately. I believe that value for customers in Scotland can be improved more quickly if we learn from the initial mistakes made by these organisations.

iii) Calculation of revenue cap

The principal aim of the Strategic Review of Charges is to make a recommendation of an appropriate revenue cap for the water

industry. Revenue, however, is different to price. If water consumption falls, then price increases will need to be higher to generate a specific level of revenue. If a customer goes 'off-network', this has the same effect. However, the number of domestic households is increasing by nearly 1% each year, and this helps reduce price relative to the revenue cap.

iv) Calculation of impact of revenue cap on prices

The information that I collect from the water authorities and from other sources allows me to make an estimate of the impact on prices of any revenue cap.

I am clearly concerned that any revenue cap has implications for prices that are as affordable as possible.

Section 2: Chapter 6

Methodology: Opportunities for Competition

a) Introduction

There is no question that competition can bring benefits to customers. One of my principal concerns in completing this Review was to understand the potential impact of competition in the water industry on customers and in particular the threat posed to revenue in Scotland. In this chapter, I outline how I identified and investigated the possible types and effects of competition.

b) Potential impact on customers

The obvious starting point was to review the development of competition in other utility sectors, such as gas and electricity. One of the key questions that I wanted to answer was the extent and scope of competitive activity. I also sought to define what characterised a natural monopoly. I have carried out extensive research into these sectors, in order for comparisons to be drawn with the Scottish water industry. This research has included examining analysis of information from other regulatory offices and government departments. I have also drawn upon a number of other studies into the utilities. In addition, I arranged a number of formal interviews with key players in the industry, City analysts and utilities consultants.

My consultation with City analysts and utilities consultants was particularly informative. Their perspectives on barriers to entry and the critical mass required to flourish in the competitive retail sector have been an important factor in my conclusions. It has also been useful to discuss the competitive dynamic in electricity generation, in order to understand whether it can be repeated in the water sector.

I have analysed extensively the gross margins available in electricity and gas retail (the supply business) and in water. This again has influenced my view on retail competition. I have also studied retail price trends in the energy markets as a result of competition and the average discount required to encourage a customer to switch suppliers.

One of the most important elements of my analysis of the post-competition utility business is the pressure for efficiency. I have looked at the delivery of this lower cost and higher quality service. I identified that two broad factors play a role. First, there was the threat to revenue of genuine choice for the

customer leading to a pressure for efficiency. This is 'in the market' competition.

Secondly is the option to a supplier to contract out activities to a third party. This can lead to a more efficient use of resources. Regulatory pressure for efficiency appears to have encouraged this trend. There have undoubtedly been benefits in terms of both levels of service and lower costs. I will call this 'for the market' competition.

c) Possible types of competition

I have looked at the development of competition in the water industry to date and its possible development in the future. I have found that the distinction between 'in the market' and 'for the market' competition is a useful tool in trying to analyse how competition may develop.

In order to understand where 'for the market' competition can take place, I have documented the business process value chain of the water industry. This splits the industry into four broad functions: ownership of assets, asset management, asset operations and interaction with customers. I have then outlined the key requirements for success in each of these functional activities, and made an assessment of the likelihood of the development of for the market competition. I have drawn heavily on my review of the experience of other utilities in trying to understand the potential influences on each of these activities. For each I have formed a view as to whether there is an alternative service provider to whom an incumbent can reasonably turn. It is clear that there are many organisations that want to own assets. It was less clear whether there were choices on the actual management of the assets – the decision whether, how and how much to invest to deliver an appropriate level of service.

I used two strategic business tools to assess the potential for competition 'in the market'. I relied on applying an analysis based on the value chain and the 'five forces' model. These tools allowed me to assess the likelihood of new entrants in each discrete activity currently undertaken by a water authority. I was able to understand the likely extent of competitive threats and opportunities after having analysed each function in turn.

i) Value chain analysis

I used the value chain to divide the activities of the water industry into discrete functional activities. These are:

- abstraction of water,
- treatment of water,
- distribution of clean water,
- retail of water and sewerage services,
- collection of sewage,
- treatment of sewage,
- disposal of sludge and treated effluent.

I then requested information from the water authorities on the costs incurred at each stage of the value chain. This allowed me to assess the potential for and the impact of competition at each stage of the process. My estimates of the potential impact on revenue and the importance of cost management are largely based on this analysis. The relative balance of costs between activities that could be competitive (at least theoretically), and those that were clear natural monopolies has informed my views on the pricing of supplier of last resort¹ options and on the likely potential for 'off-network' deals.

My value chain analysis concentrated in detail on the retail function of the authorities. In June 2001, I asked the authorities to provide detailed information on the costs incurred in their retail function. I requested detailed information on the costs of billing, customer call centres, meter reading, debt recovery etc, in addition to any other costs that the authorities believed would be appropriate to allocate to the retail business. I believed that this was important, as it would show me the relative size of the retail activity in comparison with the other functional activities. In order to understand the competitive position of the authorities, it is important to understand their relative cost efficiency. This analysis highlighted the critical nature of the bad debt position in Scotland.

ii) Five Forces Model

This model requires an understanding of the value chain of the industry. Professor Michael Porter of Harvard Business School developed this framework. The model states that there are five basic competitive forces upon which the state of competition in

any industry depends. He explains that these forces can be ranked in intensity from low to high, depending on the dynamics of the industry in question. The five forces are as follows:

- Threat of entry – Porter gives a number of examples of barriers to entry, such as economies of scale, capital requirements and product differentiation.
- Intensity of rivalry among existing competitors – depending on factors such as the number or relative market share of competitors (i.e. does one player enjoy de facto dominance because of his scale).
- Pressure from substitute products.
- Bargaining power of buyers.
- Bargaining power of suppliers.

d) 'Off-network' deals

I wanted to understand the threat posed by 'off-network' deals to the revenue of the water authorities. I requested information in my WIC 14 letter (see Appendix F) on the agreements reached with customers. My analysis of the value chain was also most useful in allowing me to conclude that cost allocation to each of the functional areas was the most critical single factor. This analysis has impacted on my views regarding 'supplier of last resort'; cost reflective tariffs; and the desirability of accounting separation.

e) Review with City analysts of high level conclusions

After I had completed my analysis of competition, I discussed my conclusions with a number of analysts, industry figures, potential new entrants to the water sector and other stakeholders. There was a surprising degree of consensus that competition in the water sector would be primarily restricted to the retail space. Their views have informed and further influenced my views. This Review is better informed because of these discussions.

¹ This supplier has to ensure that basic water and sewerage services are available in the event of a new entrant failing to meet its obligations.

Section 2: Chapter 7

Methodology: Operating Costs & Efficiency

The analysis of the authorities' costs and their efficiency relative to companies in England and Wales is a cornerstone of this Review. The results of my analyses, which are discussed in detail in Chapters 18 (operating costs), 19 (capital costs), and 20 (merger savings) show that the sustainability of the Scottish water industry in the public sector depends in a fundamental way on its ability to improve efficiency. My analysis of competition outlined in Chapter 11 makes this need for efficiency even more stark. I have therefore devoted considerable resource and effort to the analysis of the potential for efficiency. I have approached the analysis of efficiency in a number of different ways and used best practice methods of benchmarking to arrive at the most robust conclusion possible. The process that was followed is outlined in detail below.

a) Efficiency and the 'efficiency gap'

I had firstly to define efficiency in order that I could compare the water authorities in Scotland with the English and Welsh companies. I adopted a definition that is a pure economic definition whereby efficiency is achieved when an equivalent or better level of service is delivered to customers at a lower cost. I use this definition when I propose efficiency targets for operating expenditure and capital investment. I do not consider efficiency targets to have been met if the service delivered to customers has worsened, while costs reduce.

I use the annual information return from the authorities to draw comparisons with England and Wales. One of my first tasks was to understand fully the progress that had been made in England and Wales and how to measure efficiency. I found that the water and sewerage companies in England and Wales have greatly improved their efficiency since the mid-1990s and that they continue to make progress in response to targets set by Ofwat. The most important potential benefit to customers in Scotland derives from being able to compare the companies' performance with that of the authorities. This comparison informs my efficiency targets.

My assessment of the authorities' relative efficiency, and their scope for improvement, relies on detailed benchmarking that is focused on outputs, rather than on comparisons of processes. This Review assesses the scope for improvement, but it is for the water authorities to determine how those improvements will be delivered.

b) Comparative efficiency

I have followed Ofwat's lead in relying heavily on comparative competition. This is particularly useful in sectors where there is limited or no direct market competition. Customers in Scotland can benefit from the extension of comparative competition from England and Wales to Scotland.

Comparative competition works in a number of ways to achieve improvements in the water industry in England and Wales. By exposing measures of comparative efficiency within a peer group, it demonstrates to customers, to managers or to owners the degree of improvement required to achieve leading status. When this exposure is in the public domain, it stimulates companies to improve, through the reaction of stock analysts and shareholders, and in some instances through media and public reaction.

Continued exposure of relative performance introduces a powerful dynamic, as companies vie to outperform one another. Companies that do not try to outperform their peers risk depriving shareholders of the potential returns available. In England and Wales, comparative competition has delivered significant benefits to the customers of water and sewerage companies. There is evidence that comparative competition has already worked in Scotland. For example, each Code of Practice issued by one of the three authorities has strived to be better and more innovative than the existing Codes of the other two authorities. Clear objective comparison of Scottish and English performance should introduce a significant incentive to improve.

Ofwat's Annual Report on Efficiency and Unit Costs places its comparative analyses in the public domain. Among other results it contains a league table of relative operating efficiency on a scale of A to E, with position rankings for every company, and tables of relative unit operating expenditure. Examples of these tables follow.

Table 7.1: Ofwat league table for relative operating efficiency, 1999–2000 (water and sewerage companies)

Company	Water band	Water rank	Sewerage band	Sewerage rank
Anglian	A	5	C	4
Dŵr Cymru	D	10	D	10
North West	B	7	C	7
Northumbrian	A	2	C	9
Severn Trent	B	8	C	5
South West	C	9	C	8
Southern	A	3	C	6
Thames	A	4	A	2
Wessex	A	1	A	1
Yorkshire	B	6	B	3

Table 7.2: Ofwat league table of volumetric unit expenditure, 1999–2000 (water and sewerage companies)

Company	Water delivered per cubic metre	Sewage collected per cubic metre
Anglian	31p	37p
Dŵr Cymru	44p	38p
North West	31p	31p
Northumbrian	26p	25p
Severn Trent	30p	30p
South West	36p	42p
Southern	28p	30p
Thames	29p	21p
Wessex	26p	24p
Yorkshire	31p	27p

Table 7.3: Ofwat league table of unit operating expenditure per property billed, 1999–2000 (water and sewerage companies)

Company	Water service per property	Sewerage service per property
Anglian	£65	£61
Dŵr Cymru	£88	£62
North West	£59	£54
Northumbrian	£56	£44
Severn Trent	£58	£50
South West	£69	£65
Southern	£55	£52
Thames	£67	£42
Wessex	£57	£42
Yorkshire	£59	£45

These and other league tables published by Ofwat inform and promote initiatives by companies to improve their efficiency. I have applied the same methods and rules as Ofwat to place the three Scottish authorities in these league tables, as an initial step towards assessing their relative operating efficiency. I am convinced that in order to deliver the fundamental improvements required by customers, it is necessary to understand fully the extent of the improvement that is possible. Therefore I have to pay particular regard to outputs in setting an efficiency target.

In the water industry, the outputs would include the following:

- Meeting agreed environmental standards.
- Meeting agreed public health standards.
- Meeting Health and Safety requirements of employees and public.
- Quality and continuity of service to customers, including agreed improvements.
- Meeting growing demands of existing and new customers.

c) Definition of operating expenditure

i) Components of 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.

I have reviewed the operating costs incurred by the water and sewerage service undertakers in the UK. I have confirmed that they are broadly similar. This facilitates benchmarking, and enables me to analyse costs without large adjustments. My regulatory returns allow me to analyse operating costs by both function and activity. The analysis of expenditure by function provides information on what 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

My regulatory return defines these functions and activities very clearly. The definitions used are the same as those used by Ofwat.

ii) Underlying operating expenditure

One-off items of expenditure, which are unlikely to be repeated on a regular basis, can affect reported operating expenditure. Examples would include the costs of dealing with the millennium bug, abnormal pension contributions, redundancy payments, rates rebates, and unusual weather conditions.

My analysis depends upon accurate and fair benchmarking. My assessment of the Scottish water authorities' relative efficiency in operating expenditure therefore takes into account reported one-off costs, both their own and those reported by companies in England and Wales.

iii) Base service operating expenditure

There are many factors that could justifiably increase operating costs. These include:

- better standards of customer service,
- growth in the customer base,
- growth in customer demand,
- more sophisticated and effective processes for treating drinking water or treating sewage effluent.

I have endeavoured to make adjustments to ensure that these factors are taken into account before comparing trends in operating expenditure. The pace of improvement required, and the resulting cost increase, may vary from region to region, or over time. My assessment of future running costs also needs to allow for any improvements in standards.

As a consequence, the companies in England and Wales report two operating expenditure figures; one for base service and one for total operating expenditure. I have placed similar reporting requirements on the water authorities. Base service expenditure comprises the cost that is incurred simply to maintain a constant level of service from some agreed starting point. Total operating cost includes the base service and net additional running costs associated with improvements. I can compare the underlying trends in operating expenditure more fairly if new net additional costs are stripped out.

d) Review of trends in operating expenditure in Scotland

I have been keen to understand the current situation in Scotland. I have therefore completed a comparison of base operating costs for each of the authorities separately and jointly. I have observed that base operating costs have been increasing at a time when they have fallen quite rapidly in England. This has been a most important input into my risk analysis later in this Review.

e) Factors that influence operating expenditure

I have also had to develop a complete understanding of the factors that determine operating expenditure. This is essential to robust benchmarking and target setting. There are several important factors, other than management efficiency and employee productivity, that can influence operating expenditure in the water industry.

These include:

- difficulty of operating environment (population distribution and density, topography and terrain, water availability and types of source, coastal or inland character, etc);
- customer mix (domestic, non-domestic, metered, unmeasured, large/small industrial user);
- customer requirements (resolving complaints, etc);
- environmental requirements (leakage levels and targets, restrictions on water resource use, sewage effluent standards, etc);
- nature of the assets operated and maintained (size, mix, performance);
- volumes (water consumption, peak use, sewage loads);
- regional variations in charges for local authority rates, water abstraction, sewage discharges;
- regional variations in services such as mains diversions, sewer diversions ('third party' services);
- regional variations in market rates for salaries, electricity or other costs.

These cost drivers can be regarded as outwith 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 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.

My approach to benchmarking is therefore to determine, by detailed analysis of the available information, the way in which the factors listed above influence actual operating expenditure for each of the water authorities. My revised econometric models estimate the effect on costs of operating environment, 'customer base' and assets and volumes. I exclude costs that may be affected by regional distortions such as local authority rates.

My aim is to normalise costs across all of the authorities and their comparators, so that the variations that remain are likely to be associated with differences in efficiency. Comparisons of normalised operating expenditure allow me to calculate fair targets for each authority.

f) Controllable operating expenditure

In the long term, all costs, including those regarded as 'fixed', can be controlled. The degree and pace of control depends on the nature of the cost, and on the extent of unnecessary expenditure being incurred in any particular activity. I believe that my targets to reduce operating expenditure have to be both within the scope of managers to control and deliver, and sufficiently challenging to ensure that all costs are carefully scrutinised.

My analysis has taken account of comments by the water authorities and by the companies in England and Wales that a large proportion of their costs are not controllable. The empirical evidence from England and Wales, however, is that the companies nevertheless outperform efficiency targets and succeed in reducing these 'uncontrollable costs'. This experience suggests that a substantial proportion of costs are more controllable in the short term than would initially seem likely. For example, costs such as rent and business rates are in part a function of office space and the number of employees. Ofwat's approach is to apply efficiency targets to all costs, and I consider this to be equally appropriate for Scotland. I have, therefore, taken a top down approach to target setting, and feel it inappropriate to apply specific targets to different elements of spending.

g) High level benchmarking with England and Wales

I have conducted a series of high level benchmarking exercises, which compare the water authorities' unit costs with that of the companies in England and Wales. This is a useful exercise, but it is not a measure of efficiency. Differences in the operating environment outside the authority's or company's control, and assumptions made when estimating the amount of water delivered and sewage collected, both lead to variations in these unit costs.

I have made the following comparisons of unit cost:

- unit cost to customer per cubic metre of water delivered;
- unit cost to customer per cubic metre of sewage collected;
- unit operating cost per property billed (household and non-household) for water;
- unit operating cost per property billed (household and non-household) for sewerage.

I have also identified those companies whose operating environments most closely resemble those of the three authorities. Ofwat's econometric models are designed to correct for these differences, but I wanted to make my comparisons as relevant as possible to Scotland. My assessment of appropriate 'comparator' companies included:

- overall size (number of customers and asset base);
- ratio of infrastructure length (mains and sewers) to the number of customers;
- ratio of the number of above ground assets (treatment works, pumping stations, water storage facilities) to the number of customers;
- population density.

These criteria ensure that the comparator company has a similar urban/rural population split and a similar asset base. Northumbrian Water and Yorkshire Water emerged as clear comparators for both East of Scotland Water Authority and West of Scotland Water Authority. The closest comparators for North of Scotland Water Authority were South West Water and Welsh Water (Dŵr Cymru). In the case of North of Scotland Water Authority, there are significant differences with these two companies, but the Tayside and Grampian areas of the North of Scotland Water Authority are quite similar. My annual return has allowed me to collect the relevant information and conclude that the Tayside and Grampian areas are no more or less efficient than the remainder of the North of Scotland Water Authority.

h) Overview of techniques used by regulators to set targets for operating efficiency

I have aimed to use regulatory best practice and draw as fully as possible from the experience of other regulators. Inevitably, my approach closely follows that of Ofwat. Ofwat's focus on robust measurable data and its recent experience in conducting a price review for the water sector were compelling reasons for using a similar process. However, I have also looked at what other regulators are doing.

The main difference between Ofwat and other regulators is that the latter tend to adopt a 'bottom up' approach to determining operating cost levels. They carry out detailed benchmarking across a number of well-defined activities. This is the case, for example, with the Office of the Rail Regulator, and the Office of Gas and Electricity Markets, Ofgem. I am not convinced that such an approach would be helpful in Scotland. The authorities do not yet have sufficiently robust cost allocation systems in place to allow proper conclusions to be drawn from comparisons of detailed elements of cost.

i) Detailed Ofwat methodology

Ofwat's approach to assessing operating efficiency targets is 'top down'. There is no attempt to identify particular cost elements and build up a total, item by item. I have adopted a similar approach for Scotland, partly because of the cost allocation issue, and partly because I am keen to avoid any suggestion that I am dictating how targets should be achieved.

Ofwat's principal analytical tool for assessing relative operating efficiency is econometric modelling. The models were originally developed by Ofwat and Professor Mark Stewart of Warwick Business School in the early 1990s. They were used for Ofwat's 1994 and 1999 price reviews. The models are updated and published at regular intervals.

Ofwat's approach to assessing relative operating efficiency, and the econometric models themselves, were endorsed recently by the Competition Commission, following a detailed review. This followed an appeal by two small water only companies, Mid Kent and Sutton & East Surrey, to Ofwat's 1999 price determination.

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. This was in the context of promoting policy decision making on the basis of sound data analysis. The report, entitled *Adding it up: improving analysis and modelling in central government notes*:

"Ofwat have a suite of 17 models which are used for calculating the relative efficiency of water companies as part of the price setting process. Outside scrutiny is intense. The water companies have a powerful incentive to test the limits of Ofwat's models. The Regulator knows that water companies can seek an investigation by the Competition Commission or ultimately judicial review. As a result Ofwat has consulted widely in the development of the models. The original suite was developed in association with academics at the University of Warwick. Throughout the process the models have been well documented and open to public scrutiny to secure feedback and encourage collaboration. As a result of this transparency the models are defensible in the public domain."

I have adopted Ofwat's econometric modelling procedures to benchmark the authorities' operating efficiency against the companies in England and Wales. This consistency in method will allow trends to be compared over the medium to long term. It will also ensure that the Scottish industry can be compared with some of the most efficient water undertakers in the world.

I have noted the view of the Competition Commission that alternative methods may have a place. I have therefore developed a detailed alternative model to provide a second analytically robust result. This model is described later. I also believe that the comparisons of unit costs provide a simple, broad picture of relative costs. Fortunately, all of these methods give me very similar results, and underpin my judgement that the analysis of relative efficiency is both accurate and robust.

Ofwat sets price limits so that companies have an incentive to increase efficiency. This framework promotes efficiency in the medium- and long-term interests of customers. This takes account of the challenge that Ofwat faces in having to find a balance between the customer and the shareholder. It is a challenge that I do not have to take into account.

i) Incentives

Ofwat's efficiency targets assume that relatively inefficient companies will substantially catch up with the more efficient companies. They further assume that all companies have the scope to make further improvements.

The incentives to managers to deliver efficiency have recently been strengthened. Shareholders now retain efficiency savings in excess of the regulatory assumptions (outperformance) for five years before these savings are transferred to customers. This encourages managers to seek efficiency throughout the regulatory settlement period. This should reduce the level of regulatory gaming¹.

Following Ofwat's price review in 1994, companies outperformed targets for operating expenditure efficiency by a factor of around two. This meant that customers and shareholders had similar shares of the gain in efficiency. Companies are now working to outperform Ofwat's latest targets, from the 1999 price review. Latest indications are that the level of improvement is again roughly double the target. While the Scottish situation is not comparable, and there is no need to trade customer and shareholder interests, I do believe that it is important that there is significant scope for outperformance made available to managers in the setting of regulatory targets. Management should, after all, want to show all stakeholders how good they are. My targets have been set with this principle in mind.

ii) Targets

Ofwat has three separate targets for operating expenditure:

- an industry-wide target of 1.4% annually that all companies must achieve - this anticipates technological change and innovation;
- a 'catch-up' target, requiring companies to close 60% of the initial efficiency gap between themselves and the leading company over five years;
- for new operating expenditure only, a separate target that combines the above two, but also incorporates a greater factor for technological change and innovation.

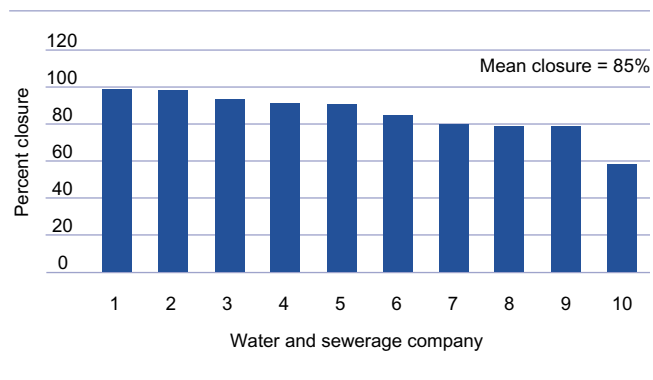
For Scotland, I have simplified this approach by taking as a benchmark the expected level of efficiency of the comparator companies in 2005. I have assumed that they meet but do not

¹ Gaming is strategic behaviour by companies, aimed at benefiting shareholders by influencing regulation; in particular the submission of costs for inclusion in the regulatory asset value which are relatively higher than those put into the profit and loss account, thus artificially raising the regulatory asset value and earning a higher cash return than would otherwise have been allowed.

exceed their targets. I have then assessed the degree to which the authorities could be expected to close the efficiency gap in the period up to 2005-06.

It is not appropriate for me simply to introduce the Ofwat method because I have allowed a very significant Spend to Save allocation of £200 million, which Ofwat has never allowed the English and Welsh companies. My analysis of the pace of improvement in operating efficiency by the water and sewerage companies supports the view that a closure of 80% of the efficiency gap is achievable in five years. Indeed, this is less than the average percent closure achieved by the privatised companies over their best five years. This represents a greater achievement than the target I have set in Scotland, because this analysis adopts, as the efficiency frontier, the performance achieved by the leading company in the fifth year, rather than the target set by the regulator. The performance of the companies is shown in Figure 7.1. The chart has had to be anonymised, as some of the information used was obtained in confidence from Ofwat.

Figure 7.1: Closure of efficiency gap by water and sewerage companies over five years



If I had used the Ofwat methodology and not allowed Spend to Save, my 80% target closure of the gap to the comparator (on the prudent assumption that there was no outperformance) would have slightly reduced the targeted closure (to 76%). However, if I include my Spend to Save provision, the proposed Scottish Water is being asked to close only 50% of the gap. I believe that my assumption that the companies will not outperform their targets leads to a prudent assessment of the efficiency gap.

iii) Econometric models

Details of Ofwat’s operating efficiency models were published in the Ofwat technical paper *Assessing the scope for future water and sewerage company efficiency* (April 1998). Updated models were published in Regulatory Director letter RD2/99 (January 1999).

Water service

The water service has been split up into four sub-service models, and these are summarised in Table 7.4.

Table 7.4: Water sub-service models

Sub-service	Model type	Explanatory variables
Water resource 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 service power	Log linear	Distribution input, average pumping head
Water business activities	Log linear	Number of billed properties

- Water resource and treatment model

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 difficulty of treatment as determined by the proportion of supplies that are taken from rivers. Costs per head are modelled rather than volumetric unit costs. This is in order to avoid rewarding high leakage, or penalising companies that have minimised demand.

Table 7.5: Water resource and treatment model

Water service		Resources and treatment expenditure	
Data: June Return		Modelled cost: resources and treatment functional expenditure less power expenditure, less Environment Agency service charges (£ million), divided by population (millions)	
Explanatory variables:	Coefficient	Standard error	
Constant	0.866	1.23	
Number of sources divided by distribution input	17.16	3.82	
Proportion of supplies derived from river sources	6.72	1.43	
Form of model: Resource and treatment expenditure (£ million) (less Environment Agency charges and power), / resident winter population (millions) = 0.866 + 17.16 * (number of sources/ distribution input (M/d)) + (6.72 * proportion of supply from rivers)			
Statistical indicators:	Number of observations: 28	R²: 0.50	

- Water distribution model

Owat carried out a thorough review of potential cost drivers for water distribution. There was no evidence in the reported information to suggest that mains length is a valid cost driver; and it is statistically inferior to alternative measures of scale. It was found that the length of large diameter mains (300mm diameter or more) is, however, significant. This result was not surprising because repairs, maintenance and inspection on large mains 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 model uses the ratio of the lengths of large mains to small mains as the cost driver. The unit costs are again expressed per head of population, rather than by volume. This reduces the potential to penalise companies with low leakage and/or low demand.

The model is shown in Table 7.6.

Table 7.6: Water distribution model

Water service		Distribution expenditure	
Data: June Return		Modelled cost: Log to the base e of distribution functional expenditure excluding power expenditure (£ million), divided by resident winter population (000s)	
Explanatory variables:	Coefficient	Standard error	
Constant	-5.13	0.11	
Length of mains greater than 300mm diameter, divided by total mains length	4.74	1.21	
Form of model: Log to the base e of (distribution functional expenditure excluding power expenditure (£ million) / (resident winter population (000s)) = -5.13 + (length of main >300mm diameter (km) / total length of main (km)) * 4.74			
Statistical indicators:	Number of observations: 28	R²: 0.39	

- Water service power model

This model is based on the physical relationship between the amount of water pumped and energy required. It incorporates both vertical lift and additional lift to overcome friction in pipes. The model recognises that economies of scale are available in pump maintenance and negotiation of electricity tariffs.

The model is shown in Table 7.7.

Table 7.7: Water service power model

Water service		Power expenditure	
Data: June Return		Modelled cost: Log to the base e of power expenditure (£ million)	
Explanatory variables:	Coefficient	Standard error	
Constant	-8.97	0.25	
Distribution input (M/d) * average pumping head (m)	0.94	0.02	
Form of model: Log to the base e of power expenditure = -8.97 + (Log to the base e of distribution input * average pumping head) * 0.94			
Statistical indicators:	Number of observations: 28	R²: 0.985	

● Water business activities model

This model relates business activity costs 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 ultimately within management control, and so are not considered valid explanatory factors.

The model is shown in Table 7.8.

Table 7.8: Water business activities model

Water service		Business activities expenditure
Data: June Return		Modelled cost: Log to the base e of business activities expenditure (including doubtful debts) less local authority rates (£ million)
Explanatory variables:	Coefficient	Standard error
Constant	-4.15	0.25
Log to base e of number of billed properties (000s)	0.97	0.04
Form of model: Log to the base e of business activities expenditure = -4.15 + Log to the base e of number of billed properties *0.97		
Statistical indicators:	Number of observations: 28	R²: 0.96

Sewerage service

The five sub-service models are summarised in Table 7.9².

Table 7.9: Sewerage sub-service models

Sub-service	Model type	Explanatory variables
Sewerage network	Log linear	Sewer length, area, resident population, holiday population
Large sewage treatment works	Log linear	Total load, use of biological treatment, use of activated sludge, tight effluent consent for suspended solids and BOD
Small sewage treatment works	Unit cost	Works size, works type, load
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route
Business activities	Unit cost	Billed properties

● Sewerage network model

This model expresses costs per unit length of sewer. It takes into account the amount of sewage being transported along the sewer. This is a function of area since this will affect surface drainage and costs associated with remoteness. This is also a function of population as this will impact sewage volumes. The model takes account of the higher costs expected in regions with a significant holiday population.

The model is shown in Table 7.10.

Table 7.10: Sewerage network model

Sewerage service		Sewer network expenditure
Data: June Return		Modelled cost: Log to the base e of sewerage network functional expenditure (£ million), less Environment Agency charges, per kilometre of sewer, for each sewerage area.
Explanatory variables:	Coefficient	Standard error
Log to base e of area of sewer district per kilometre of sewer	0.10	0.03
Log to base e of residential population per kilometre of sewer	0.53	0.24
Holiday population divided by resident population	2.26	0.57
Constant	-6.43	0.43
Form of model: Log to base e of sewerage area functional expenditure (less Environment Agency charges) per kilometre of sewer = -6.43 + log to base e of (area of sewer district/ sewer length) * 0.10 + log to base e of (residential population/ sewer length * 0.53 + (holiday population/ residential population) * 2.26		
Statistical indicators:	Number of observations: 62	R²: 0.45

● Large sewage treatment works model

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 domestic and industrial, expressed in terms of the number of domestic customers required to produce a similar volume.

The model takes into account the sewage load reaching the treatment works; the type of treatment in place (e.g. activated

² Biological Oxygen Demand – a measure of the pollution potential of sewage effluent.

Table 7.11: Large sewage treatment works model

Sewerage service		Costs of sewage treatment at large works	
Data: June Return		Modelled cost: Log to the base e of functional expenditure on sewage treatment at large works (£000s) less Environment Agency charges and pumping costs	
Explanatory variables:	Coefficient	Standard error	
Constant	-1.85	0.29	
Log to base e of total load ³	0.77	0.03	
Biological treatment used	0.23	0.09	
Activated sludge used	0.48	0.08	
Tight effluent consent for both suspended solids and BOD	0.11	0.06	
Form of model: Log to base e of sewerage area functional expenditure on sewage treatment at large works (£000s) = -1.85 + (log to base e of total load) * 0.77 + 0.23 if biological treatment used + 0.48 if activated sludge used + 0.11 if tight effluent consent for both suspended solids and BOD			
Statistical indicators:		Number of observations: 359	R ² : 0.69

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.

The model is shown in Table 7.11.

- Small sewage treatment works model

This model uses average unit costs across England and Wales. This model therefore requires less data than the large works model. This is a necessary simplification given that there are thousands of small sewage treatment works. The cost matrix, shown in Table 7.12, takes into account the scale of the works – there are significant economies of scale – and the type of treatment process employed. I added an extra Band 0 to the matrix to take account of very small works found in some regions of Scotland.

- Sludge treatment and disposal model

This model compares the costs of sludge treatment and disposal to the volume treated and the methods of disposal

Table 7.12: The matrix of average unit costs

Unit cost (£000s /year per Kg BOD5 daily load)										
Size Band	Primary	Secondary		Tertiary				Sea Outfall		
		Activated Sludge	Biological	A1	A2	B1	B2	Primary	Screened	Un-Screened
0 Scotland	1.58	2.49	1.26	3.65	0.27	1.33	N/A	2.54	2.70	0.47
1 Scotland	0.80	1.26	0.64	1.85	0.13	0.67	N/A	1.28	0.78	0.11
1 England & Wales	1.07	1.70	0.86	2.48	0.18	0.9	N/A	1.72	1.09	0.19
2	0.21	0.68	0.44	0.91	N/A	0.53	0.50	N/A	0.04	0.05
3	0.13	0.44	0.30	0.37	0.46	0.30	0.21	0.10	0.03	0.02
4	0.13	0.26	0.15	0.21	0.26	0.17	0.18	0.16	0.02	0.01
5	0.11	0.12	0.08	0.08	0.07	0.09	0.06	0.08	0.05	0.01
6								0.04	0.02	0.01

Size bands are defined as follows, in terms of daily sewage load, in kg of BOD5 (a measure of the polluting potential of sewage):

0: <6 (Scotland only) 1 (Scotland): 6-15 1 (England and Wales) <15 2:15-30

3: 30-120 4: 120-600 5: 600-1500 6: >1500

Band 1 works in England and Wales would typically serve fewer than 250 population equivalent, and Band 6 more than 25,000.

Owat's matrix does not include Band 0, which is relevant only to parts of Scotland. Band 0 works would typically serve communities of fewer than 100 people.

Band 6 works, other than sea outfalls, are modelled separately in the large works model.

³ Load is a measure of the quantity and type of sewage reaching the treatment works.

available. 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.

The average unit costs are shown in Table 7.13.

Table 7.13: Average unit costs for sludge treatment and disposal

Weighted unit cost of sludge disposed to:	£000s/thousand tonnes of dry solids
Farmland	223
Landfill	170
Incineration	233
Sea	130
Other	101

- Business activities model

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. Sewage is treated by the ten large privatised companies in England and Wales.

The model has an unweighted average unit cost of business activities in England and Wales of £10.20 per billed property.

j) Revised Ofwat methodology to suit the Scottish situation

I outlined earlier the importance of ensuring that factors not controllable by management are taken fully into account. I have therefore had to consider very carefully the geographical, demographic and other differences that distinguish Scotland from England and Wales. Large parts of Scotland are rural. This means that, in some parts of their areas, the authorities operate treatment works and other plant on a much smaller scale. The costs of operating these works are inevitably higher than for larger works.

The Ofwat models do take due account of many of these differences. Ofwat also takes into account separately local factors and adjusts the econometric model results. Nevertheless, I have found it necessary to refine the analysis to take full account of some unavoidable cost differences. My revisions to Ofwat's methodology are as follows:

- A re-categorisation of water source types to include lochs, springs and burns. This affects the resources and treatment model.
- An extension of Ofwat's banding for small sewage treatment works (as noted above) to include a separate category comprising the many very small works in Scotland. I have also included higher unit cost for these works in the model.

I have also asked the authorities to submit their assessment of any local factors that influence their costs. These factors should be unusual in a UK context and so are unlikely to be covered by the econometric models.

I have included any claim that met the following criteria:

- the factors identified distinguish the authority from UK norms and demonstrate a clear difference with other water and sewerage service providers;
- the factors are not already directly or indirectly taken into account in the econometric models used for benchmarking;
- the factors are demonstrably and in principle outwith management control of the authority, in the short and medium term;
- the additional costs incurred have been properly identified, quantified and supported by direct (not proxy) evidence;
- actual costs in 1999-2000 and 2000-01 are presented;
- the authority has taken steps to limit the cost impact, where possible;
- there is no offsetting factor that would pass the above criteria but would reduce rather than increase operating costs.

k) Alternative approach

I developed an alternative model for two reasons: firstly to respond to the view expressed by the Competition Commission, to which I referred earlier; and second in order to confirm the result of the econometric models.

The alternative model was designed to take full account of the special circumstances surrounding the provision of water and waste water services in Scotland. It uses a fundamentally different approach from the econometric models. It is based on the premise that in most parts of the business, running costs

are driven by asset use, volumes and customers. This contrasts with the econometric models, which examine the interrelationships between these and other drivers, and concentrate only on those that best explain cost variation between companies.

This approach splits the business into ten different areas, as follows:

- delivery of water,
- resource and treatment,
- business activities water,
- bad debt water,
- simple sewage treatment,
- complex sewage treatment,
- running the sewer network,
- processing sludge,
- business activities sewerage,
- bad debt sewerage.

I have examined each business area to determine the most appropriate cost drivers. The number of cost drivers varies between one and five. The number depends on the quantity of material factors that influence the operating cost of each area. I identified three associated unit costs for each driver. There is a medium cost estimate, a high and a low cost estimate. These different cost combinations are combined together to produce 243 different combinations of predicted costs for each English and Welsh company and each water authority. This covers each of the ten areas identified above.

I determined the relative efficiency of each authority by dividing the 243 x 10 predicted costs by the actual reported spending by each company and each authority. I combined the ten areas to determine the overall efficiency of each company. My analysis of these ratios took account of any one-off costs and inflation. My approach therefore ensured that all relevant costs in the delivery of water and waste water services had been considered.

In order to use this model I had to estimate unit costs for each component. I determined the unit cost estimates in a number of ways, depending on the source and accuracy of the information available. The unit costs fell into the following categories:

- Category 1 - calculated directly from England and Wales or UK data;

- Category 2 - calculated to sum to reported England and Wales or UK totals;
- Category 3 - internal Ofwat/Water Industry Commissioner figure based on company evidence;
- Category 4 - figure derived from econometric model;
- Category 5 - plausible estimate;
- Category 6 - balancing item.

I incorporated prudent tolerance ranges into the model. I did this to ensure that the efficiency targets are determined for the authorities as accurately as possible. The tolerance ranges reflect the maximum uncertainty in the data, and are as follows:

- Category 1 → +/- 20%
- Category 2 → +/- 25%
- Category 3 → +/- 33%
- Category 4 → +/- 50%
- Category 5 → +/- 50%
- Category 6 → +/- 50%

I incorporated economies of scale into the model. I wanted to be sure that my results took account of the different size of assets used by each company and authority. I was therefore able to determine a standard sized asset and hence to calculate a single unit cost.

I wanted to ensure that both the econometric modelling and the alternative approach, although different and independent of one another, were consistent. I used the same comparator companies as with the econometric analysis.

I have made every effort in developing this model to ensure that it fairly represents the current operating cost position of the companies and authorities. It could be argued that this model should benefit the authorities more than the Ofwat econometric models. This is because this model is more asset based.

I) Prudent approach to targets

I have made a number of assumptions favourable to the authorities throughout my analysis. These are highlighted below:

- I have taken into account the authorities' claims for local circumstances in assessing funding needs.
- I have set the target at 80% of the total assessed gap.

- I calculated the gap against the comparator companies. They are not the leading company.
- I have compared the authorities with the privatised water companies. The achievements in other utilities have been even better.
- I have phased the target over the four years to 2005-06.
- My benchmarking includes the full costs incurred by the companies for leakage targets, domestic metering and other imposed costs not faced in Scotland. If I adjusted for these costs, the efficiency gap and targets for operating expenditure would have increased.
- I have made no allowance for outperformance by the companies of the 2000-05 Ofwat determination. I would, however, expect the companies to outperform their targets by at least 10%.
- I have made no allowance for operating expenditure savings by the companies in England and Wales in 2005-06 (as this extends into the next English and Welsh review period).

I believe that these favourable assumptions should ensure that my target is fair and, without question, achievable.

m) Additional operating expenditure to improve levels of service

I need to ensure that sufficient allowance is made to fund the operation of the new assets created to improve service. The Quality and Standards process (see Chapter 15) has determined the improvements that are considered necessary over the period 2002-03 to 2005-06. In some cases, the capital investment alone will deliver the required improvements to levels of service (e.g. a mains replacement project), but in many instances there are implications for operating expenditure.

Some of the costs of improved environmental standards and better service delivery are already assumed within the benchmarked targets. The authorities have examined their investment programmes for their expected impact on operating

expenditure, and I have reviewed and compared the authorities' estimates with comparable figures for England and Wales. I want to ensure that credit is only given for a genuine improvement in service levels that has not already been included in the benchmarks. I have also reviewed these estimates to ensure that they are consistent with fully efficient operation of new plant and equipment. Examples of additional operating expenditures would include the following:

- improved response to customer queries and complaints;
- chemicals and filter media for more effective water purification;
- costs of services to customers in new housing developments;
- operation of processes to reduce pollution levels in sewage;
- tankering and safe disposal of sewage sludge previously disposed at sea.

I have taken into account the higher standards typically achieved in England and Wales. For example, the operating expenditure reported by the companies, and used in my benchmarking, includes the cost of providing higher standards of water treatment than in Scotland. It is therefore not appropriate for me to determine an additional allowance for water treatment costs in Scotland.

n) 'Spend to Save'

I have used the term 'Spend to Save' to describe additional funds, which I am allowing within the authorities' revenue cap. These are to be spent by the authorities on initiatives that will reduce their costs going forward, and help them to achieve the efficiency targets. These additional funds, in my view, are a necessary expense and a justifiable investment in the future.

I believe that this Spend to Save allowance will greatly assist the industry in meeting the efficiency targets. I am aware, however, that in England and Wales no similar allowance was made available through customers' charges. The water companies had to fund any similar initiatives by outperforming Ofwat's targets.

I have estimated an appropriate allowance for Spend to Save through an iterative process. I first asked the authorities to submit Strategic Business Plans in my WIC 8 letter. I asked each

of the authorities to detail and to cost the Spend to Save initiatives that they would implement in order to achieve the operating cost targets.

I sought further information on the Spend to Save plans of the authorities in my WIC 12 letter. This included a request for a detailed justification of the expenditure, and a description of the appraisal process.

I have sought to match the Spend to Save allowance with the scope and phasing of the target for operating expenditure efficiency. The industry is actually able to spend more on operating costs in 2002-03 and 2003-04 than I would otherwise have allowed. The Spend to Save allowance in each year is greater than the operating cost efficiency target. I am, therefore, convinced that the industry has adequate resources to implement the initiatives that they regard as necessary to achieve the efficiency targets.

Section 2: Chapter 8

Methodology: Capital Expenditure Efficiency

a) Introduction

In this chapter I explain how I assessed the authorities' relative efficiency on capital expenditure and how I determined appropriate targets for improvement. As discussed in the previous chapter, improved efficiency means delivering the same or better levels of service for customers at lower cost, rather than simply cutting costs.

b) Approaches to analysing capital efficiency

My initial view was that the Ofwat methodology would be equally effective in Scotland. There were several potential attractions:

- It is an approach designed specifically for the water industry.
- It allows me to benchmark trends in Scotland with England and Wales.
- The capital and operational efficiency assessment processes of Ofwat are necessarily complimentary. I consider that there could be a risk of double-counting, or indeed not counting potential for efficiency, if the approach to capital efficiency had differed significantly from that used by Ofwat.

I have reviewed the techniques used by other regulators. This confirmed my initial approach.

i) Office of the Rail Regulator (ORR)

ORR does not set capital efficiency targets. Its Periodic Review allows for a base level of investment to cover maintenance, and there is a framework in place for negotiating enhancements to the network on a contract by contract basis.

ii) Office of Gas and Electricity Markets (Ofgem)

Ofgem relies on modelling of the capital investment programmes. For the electricity industry it analyses enhancements to the distribution network separately from maintenance of the network.

- Load related expenditure – this is investment spending associated with the connection of new customers to the distribution system and reinforcements to the existing system to accommodate growth. Analysis has focused on

modelling load related expenditure to arrive at an independent assessment of expenditure requirements that is applicable to all companies.

- Non load related expenditure – this is investment spending directed at the replacement of life expired assets and expenditure on network control, information gathering facilities and improving quality of supply. Non load related expenditure allowances are based on modelling of asset replacement requirements using historical information about replacement levels, unit costs and asset age profiles. By benchmarking the companies in terms of number of assets to be replaced and unit costs, Ofgem was able to determine the levels of expenditure expected to result from the application of best practice across all companies.

This approach is not materially different from that used by Ofwat in assessing the serviceability of the distribution network.

c) Ofwat methodology

i) Introduction

Ofwat has a duty to ensure that the industry is properly financed, i.e. that the companies have sufficient resources to meet their environmental and public health obligations and to maintain effectively their existing asset base. Ofwat also has to ensure that the customer pays a fair price for the service that is provided.

Ofwat's approach to capital efficiency mirrors its approach to operating cost efficiency. The capital efficiency targets assume that relatively inefficient companies will substantially catch up with the more efficient companies, and that all companies have the scope to make further improvements. Ofwat ensures that relative performance is published. This increases stakeholder pressure on management to perform.

Ofwat uses its 'June Return' to collect information on the assets of the companies. This is complimented by the Asset Management Planning process (the English and Welsh equivalent of the Quality and Standards process), which provides details of the spending required to meet the outputs required by the Environment Agency and the Drinking Water Inspectorate. The information provided by the companies is audited both technically and financially by Reporters who work for Ofwat.

ii) Targets

Ofwat makes three adjustments to capital spending estimates of companies in order to ensure that price limits reflect the scope for improved capital efficiency:

- A scope and consistency challenge - Ofwat applies a 'scope and consistency' adjustment to each company's planned quality enhancement investment programme. This is informed by the views of the Reporter on the level of risk adopted by the company.
- Cost base catch-up analysis - Ofwat compares the comparative efficiency of companies in procuring and implementing their capital programmes. Ofwat uses this to set target capital efficiency improvements for each of the less efficient companies. The aim is to narrow the gap with the more efficient companies. Ofwat defines the extent to which the efficiency gap can be narrowed in capital maintenance by means of both the cost base analysis and econometric modelling of the companies' capital maintenance expenditure.

Ofwat assumes that companies will be able to close 75% of the gap with the most efficient companies in their quality enhancement programmes and 50% of the corresponding gap in their capital maintenance programmes. This is designed to ensure that a well-managed company will do better than its target and will therefore be able to benefit from its outperformance.

In 1994, Ofwat assumed that companies would achieve the catch-up efficiency assumptions evenly over the five-year price limit period. In 1999, Ofwat assumed that all the savings were achievable in year one, reflecting the fact that many companies were able to outperform the targets early in the five-year period.

- Cost base efficiency frontier movement - Ofwat assesses the potential for efficient companies to improve their efficiency further, especially as a result of improved purchasing methods, operational practices and technological developments.

The Babbie Report, *Report and opinion on the scope for widescale adoption of lower cost new technologies and*

practices in the water industry, was used to compare the current availability of low cost technologies and practice with the position at the time of the 1994 Periodic Review. The evidence showed that there were significantly more low cost technologies in 1999 when compared with five years previously. This demonstrated that there had been scope for continual improvement in efficiency during the last five years, and was used to inform the potential for improvement during the next five years.

The Report estimated that the savings could be as high as 8% to 16% over the period. It seemed that a prudent view of savings from 5% to 10% savings over the period was a reasonable expectation.

Ofwat assumed that the efficiency frontier would move forward by at least 1.4% per annum for capital maintenance and by a higher figure of 2.1% for capital enhancement. The higher figure for capital enhancement is justified since it should be possible to take full account of emerging technology with new investment.

Ofwat assumes that this potential is available to all companies and therefore each company's capital efficiency target includes an element for innovation.

iii) Incentives

Ofwat seeks to set targets that a well-managed company should be capable of beating. This outperformance can increase the regulatory return available to the shareholder. Ofwat trusts that this scope for outperformance and superior returns will focus management's attention on delivering the service at the lowest possible cost.

d) Revised Ofwat methodology to suit the Scottish situation

In Scotland, there is no role for Reporters in the current regulatory framework. There is, therefore, no independent scrutiny of the absolute need for each investment project. I have used the conclusions from the Information Project and industry consultation to assess the current position of the authorities in terms of strategic asset management and programme planning. This replaces Ofwat's 'scope and consistency' challenge.

My approach in Scotland has also had to take into account the limited information available at the current time on trends in performance of assets. I have been unable to complete econometric modelling on capital maintenance as the asset trend information is not available. I have had to rely solely on the cost base and long run normative charge analyses in this area.

I have applied the Ofwat methodology on the cost base analysis. However, I have adjusted the rate at which the Scottish industry is expected to reach the Ofwat benchmark company. I discuss this in more detail below.

I also look beyond the cost base for capital efficiency and my analysis takes account of the potential not just of procurement but also of asset management and programme planning. My targets have taken account of each stage of the capital investment process. I am confident that this process has identified the scope for efficiency.

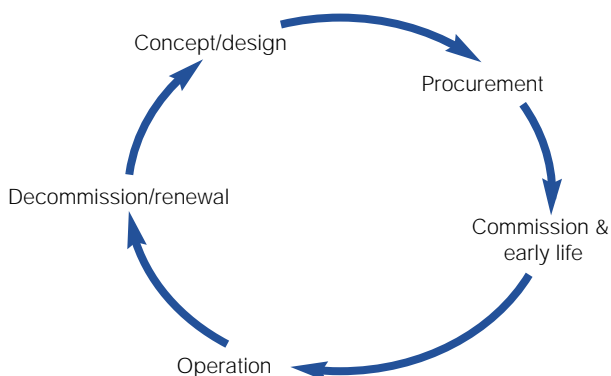
e) Approach

i) Introduction

My starting point in assessing the scope for capital efficiency improvement was to study the asset lifecycle. I separated the capital investment process into a series of discrete steps or 'building blocks'. This allowed me to assess the potential for efficiency at each step.

I started by dividing the lifecycle of an asset into five distinct phases: concept and design; procurement; commissioning and early life; operation; and decommissioning/renewal.

Figure 8.1: Lifecycle of an asset



Each phase involves different decisions or actions by those who are managing or operating the asset. I have to review each phase in order that I can understand where costs are incurred throughout the asset's life. This allows me to identify where the potential for efficiency lies.

I have looked for efficiencies across four broad areas, which cover all steps of the asset life cycle.

- Strategic asset management – ‘saving by not doing’. These are savings that can be achieved by simply not spending the money that was allocated. It is essential to bear in mind that not spending would only be considered to be an efficiency if this were done without compromising output and performance measures. An example would be replacing pumps every five as opposed to every three years.
- Programme planning or investment appraisal – ‘doing it better’. This area of analysis would question whether the projects deliver their objectives in the most cost-effective way.
- Procurement – ‘buying it smarter’. This is the application of the cost base analysis described above. The aim of this analysis is to assess the opportunity for procurement savings by comparing the prices paid by the full range of companies and authorities for standardised capital projects.
- Innovation – ‘doing it the new way’. This analysis assesses the scope for innovation efficiency by comparing the impact of low cost technologies with current practice. It may also suggest slightly different operating practices which could remove or limit the need for capital investment.

ii) Scope for efficiency

My approach to measuring the scope for capital efficiency was to combine quantitative evidence from the cost base analyses with other qualitative information that was available to me. These qualitative sources included the results of the Information Project, consultations with stakeholders in capital intensive industries, third party research and analysis from other regulators.

Table 8.1: Methods for assessing capital efficiency

Area identified for efficiency	Tools
Strategic asset management	Information Project; industry consultation/benchmarking
Programme planning (appraisal)	
Procurement	Cost base analysis
Innovation	Babtie Group Report

Information Project

The conclusions of the Information Project confirmed that there was considerable scope for efficiency in strategic asset management and performance planning. I have described the conclusion of the Information Project in more detail in Chapter 3.

Industry consultation

My office and I met with a number of companies, other regulators and trade associations to ascertain what had been achieved in terms of capital efficiencies in the areas of planning, procurement and management. We met with the organisations listed in Table 8.2.

I used a standard questionnaire to ensure that I could make proper comparisons between the various organisations. The planning questions covered:

- whole life costing,
- project appraisal,
- project cost estimates,
- internal audit.

Table 8.2: Organisations met during industry consultation

Privatised water companies	Other utilities	Other asset intensive industries	Other regulators	Industry associations/contractors	Investors and consultants
Anglian Water	BT	BAA	CAA	ACE	Andersen
Northumbrian Water	Scottish Power	Exxon	Ofgem	AMEC	Cap Gemini Ernst and Young
Severn Trent Water	Scottish and Southern		Ofwat	CECA	Deutsche Bank
Yorkshire Water	Yorkshire Electricity			Hyder Consulting	Ernst and Young
Welsh Water				MJ Gleeson Group plc	Merryl Lynch
					Schroder Salomon Smith Barney

My discussions also covered methods of procurement and organisations' views on framework, partnering and other solutions. I was also interested in the number of contractors each organisation used.

Industry benchmarking

I have reviewed in some detail the achievements in capital efficiency of the privatised companies in England and Wales since 1989. This has been important to my analysis of the potential efficiency for the Scottish water industry. I have not identified any reason why the Scottish industry should not be at least as efficient.

Cost base analysis

I used the cost base analysis to assess the gap in procurement efficiency between the authorities and the privatised companies in England and Wales. My analysis largely follows the methodology devised by Ofwat. This methodology was scrutinised in detail in August 2000 by the Competition Commission.

I asked each of the water authorities to prepare a cost base on the same basis as that submitted to Ofwat by the companies in England and Wales. I separately developed a model that benchmarks the authorities' unit costs against the Ofwat benchmark costs and which accounts for the relative importance at each element of the cost base in the capital programme. This means that if, for example, the unit cost of a 600mm water pipe is 50% above the benchmark, the 50% will apply only to that proportion of the programme represented by 600mm pipes.

I received the cost base submissions between March 2001 and June 2001. I entered the standard costs into my model and compared the results with the Ofwat benchmark costs. This produced a set of percentage gaps between the authorities' unit costs and the Ofwat benchmarks for water infrastructure, waste water infrastructure, water non-infrastructure and waste water non-infrastructure.

The cost base of the authorities and the Ofwat benchmark costs were not strictly comparable. I also had to take into account the rate of improvement of the privatised companies.

Current data compared with 1998 benchmark

The Ofwat benchmarks relate to costs collected by Ofwat in June 1998. I therefore had to adjust the percentage gaps from my model to reflect improvement by the privatised companies between 1998 and 2001.

I assumed that the benchmark costs in England and Wales fell by 2.5% nominal per annum over the 30-month period from October 1998 to March 2001. I based this on my meetings with a range of stakeholders in capital intensive industries.

My assumption that the costs would have dropped by 2.5% per annum is supported by Ofwat's report, *Capital works unit costs in the water industry*, published in 1999. This showed that capital unit costs had fallen by 10% in the water industry between 1994 and 1998.

I used October 1998 as a starting point and not June 1998 because the companies in England and Wales resubmitted their costs in April 1999. Using the October date was therefore an attempt to average the cost base submissions.

Increasing the efficiency gap

Past experience would suggest that it is likely that the privatised companies will continue to improve their level of capital efficiency. If the water authorities were not to act to improve their efficiency, the gap between their current performance and that of the privatised companies would grow between now and 2005-06. For reasons of prudence, I have assumed that the companies in England and Wales will continue to reduce costs no faster than the historic level of 2.5% per annum. Given the

extent of investor pressure on managements within the sector at the current time, this is likely to be a conservative assumption.

Regulatory gaming

It is often argued that the regulatory system in England and Wales is subject to, and indeed even encourages, regulatory 'gaming'. As the companies earn a return on their regulatory capital value, they might be incentivised to maximise their capital value by overstating investment needs, including capital unit costs. There is some evidence based on the cost base submissions from the companies and the water authorities, which would suggest that the costs submitted by the companies for projects that were added to their regulatory capital value were relatively higher than those that were expensed through the profit and loss account.

Potentially the capital efficiency gap between the water authorities in Scotland and the privatised companies in England and Wales is understated by the cost base analysis. In order to ensure that I do not overstate the margin for improvement in Scotland, I have chosen to disregard the likely gaming.

Innovation: Babbie Report

I discussed the Babbie Report *Report and opinion on the scope for widescale adoption of lower cost new technologies and practices in the water industry* earlier in this chapter. I have chosen to apply the same 1.4% per year target for innovation that Ofwat applied.

Discussion with stakeholders

I have held a number of meetings with management of the authorities to discuss my methodology, and to consider management's understanding of the efficiency gap and where potential areas for efficiency may lie. I presented the initial results of my findings in May 2001 to a meeting with the senior management of the authorities, the Scottish Executive and the Scottish Water transition team, which has been set up by the Scottish Executive to manage the proposed merger integration process. I then arranged meetings with each authority to clarify any particular areas of concern. Subsequently, each authority has agreed that the targets are achievable.

I have met with SEPA and the Scottish Executive (in its role as Drinking Water Monitor) on several occasions. We are all committed to ensuring that the level of outputs will not deteriorate as a result of my efficiency targets.

Setting the target

My target for capital efficiency is robust and draws on extensive qualitative and quantitative evidence. The target reflects the evidence from the cost base, from the Information Project, from industry consultation and benchmarking and from the Babbie Group Innovation Study.

The cost base analysis clearly establishes a significant gap in procurement efficiency. I have conservatively assumed this gap to be at the lower end of the possible range suggested by my analysis.

It is more difficult to quantify the potential savings in asset management and strategy. This is partly due to the limited quality of asset information in Scotland and partly due to the fact that there is no established methodology applied by Ofwat or any other regulator. I would need to understand the risk profile (on a fully comparable basis) that is being run by each of the companies or authorities in order properly to quantify the scope for asset management efficiency.

I have therefore assumed that all non-procurement savings, required of the privatised companies within their agreed price limits, relate to asset management and programme planning.

The opportunity for asset management efficiency is the net result of the total efficiencies required in England and Wales less the efficiencies identified through my assessment of the impact of innovation and the potential for procurement efficiency. I have made three assumptions to reach a final conclusion on the scope for asset management efficiency.

- I have assumed that the gap in cost base efficiency between the Ofwat comparators and the Scottish industry has appeared since privatisation of the water industry in England and Wales. There is assumed to have been an 11.9% gap in procurement built up by 1995 (-2.5% per annum over five years).

- The procurement gap is assumed to be 20% at 2000-01. This is consistent with both the comparisons of my model against Ofwat benchmark costs at 2000-01 and the assumption that the private companies are reducing costs by 2.5% per annum.

- Capital efficiency savings that have resulted from privatised companies delaying projects have been excluded from cumulative efficiency calculations.

The efficiency percentages are multiplicative, not arithmetic. This means that two 20% savings do not equal 40% (i.e. 20%+20%), but equal 36%. This is calculated by the formula $1 - [(1-x) (1-x)]$, where x is the efficiency percentage.

Application of the target

I have set targets on the basis that the Scottish water industry should be capable of narrowing 80% of the estimated capital efficiency gap. This is consistent with my approach to merger savings and operational cost efficiency.

The capital efficiency target percentages have to be applied to the capital spending of the water authorities. The Quality and Standards programme costs represent both the hard capital costs and the capitalised labour costs incurred in the delivery of the investment programme. I have reviewed the past several years and identified that approximately 8% of total capital spending is accounted for by capitalised labour. I am therefore applying the capital efficiency targets to the 92% of the capital programme that remains after removing capitalised labour.

I expect the water authorities to make the same efficiencies in capitalised labour as I have set for operational costs.

I have also not included any efficiency targets on Spend to Save resources that are being made available to the water authorities.

My calculation of the efficiency target is outlined below:

Efficiency target =
 92% of authorities' total investment (£m) multiplied by 80% of assessed capital expenditure efficiency gap (%) plus - 8% of authorities' total investment multiplied by 80% of assessed operating cost efficiency gap (%)

I have also not applied an efficiency target to PPP projects. These projects do have an impact on levels of capital maintenance and operating cost allowances for assets. My approach still includes these assets within the authority and allowances are available for them. This factor certainly means that I am understating the efficiency gap.

Phasing of the targets

In its 1999 Periodic Review, Ofwat assumed in its cost base analysis that the companies would be able to meet the capital efficiency targets in the first year. However, I have recognised that although efficiency savings can be identified in the early stages of each project, they are not fully realised until the later construction stages.

I have chosen to delay non-essential capital spending. This does not impact on any environmental or public health deadlines. I have also placed the achievement of the capital efficiency targets over the full four years. Both these assumptions should help the authorities to outperform the targets that I have set.

f) Prudent approach

I have consistently made assumptions that favour the authorities. These include excluding Spend to Save and PPP from efficiency targets. There are a number of other assumptions that also benefit the authorities. These are listed below:

- I made no allowance for any additional potential for capital efficiencies that could result from the proposed merger of the authorities.
- I have assessed the efficiency gap relative to the Ofwat benchmark and not relative to the leading companies.
- I have restricted my analysis to the water industry. If I had benchmarked against achievements in other industries, such as electricity, the gap would increase significantly.
- I have allowed the authorities four years to achieve 80% catch-up with the benchmark in the cost base analysis. Ofwat allows only one year, and the Competition

Commission only extended this to three years for the two small water companies that appealed against the Ofwat determination.

- I have made no allowance for 'gaming' by the companies in England and Wales in the reporting of their capital unit costs.
- I have made no allowance for outperformance by the companies of the 2000-05 Ofwat determination.

I believe that these favourable assumptions ensure that my targets are prudent. I am confident that good management will outperform these targets.

Section 2: Chapter 9

Methodology: Merger Savings

a) Introduction

The potential for savings that would result from the creation of the proposed Scottish Water seem likely to be significant. There are obvious benefits such as scale and scope and it is therefore important that the benefits of the merger be quantified and that customers receive the benefit.

I am setting a 'merger efficiency' target for two reasons. Firstly, the operating and capital efficiency targets for the individual water authorities do not take any account of the potential created by the merger. Second, there has been no evidence of effective collaboration prior to the announcement of the intention to create Scottish Water by Sam Galbraith, MSP, in February 2001.

I make no effort to quantify all of the efficiencies that would result from the creation of Scottish Water. I attempt to quantify only those savings that become possible as a direct result of the merger. I have therefore striven to ensure that there can be no question of double counting the potential for efficiency.

I have limited my analysis to operational cost savings. In many ways, I believe that there is a strong case for extending the search for savings into the capital spending arena. There would certainly seem to be a considerable amount of empirical evidence that would support the existence of lower unit costs in procurement and capital management within a larger organisation. The Michael Porter competitive strategy framework also explicitly identifies buyer power as one of the main drivers in determining the behaviour of markets (see Chapter 6). There is, however, insufficient reliable data available on how capital costs have changed as a result of mergers. I have therefore decided not to include this undoubted potential in my target for merger efficiency.

There is also clearly potential for an on-going rationalisation of the properties owned by the water authorities. Although this is not a true efficiency in the definition used elsewhere in this Review, I have tried to make a reasonable estimate of the scope for these disposals over the period 2002-06.

b) Approaches to analysing merger efficiencies

I have considered the potential for merger efficiencies in three

ways. To each of these options I have added my estimate for the proceeds that could arise from the disposal of property.

- i) Assessment of the potential merger savings of the enlarged authority, based on an Ofwat model. This model was contained in the detailed evidence provided to the Competition Commission in the hearings on Mid Kent Water Ltd and Sutton & East Surrey Water Ltd.
- ii) Assessment of the likely size of a single, efficient head office and support infrastructure, when compared with the post efficiency three head office and support service infrastructures. A further assessment was made using a higher average salary level, which better reflects the average remuneration in head office type functions and an increased per capita level of overheads.
- iii) Assessment of the scope for merger savings based on a review of what has been achieved by the merger of other significant water and sewerage undertakings, in utility mergers, private companies and in the public sector.

I will review the process used for each of these approaches below.

i) Ofwat econometric models

The Ofwat econometric models provide a limited insight into the potential for scale and scope efficiencies. Re-running those models for the proposed Scottish Water would provide some insight into the potential merger savings. Economies of scale and scope are a feature of two of the models used for benchmarking operating expenditure efficiency in this Review, and are described in my earlier discussion of the calculation of operating efficiency targets. These two models cover the pumping costs for the water service and costs incurred on customer services, scientific services, doubtful debt and other business overheads.

The other models do not reflect any economies of scale. This is because in each of these cases, there were found to be explanatory variables that were more significant than scale. The other models rightly therefore restrict themselves to

stronger drivers of cost, associated with the asset base. One of the reasons why scale does not feature significantly, particularly on the sewerage side, is that there are only ten companies available for study in England and Wales and there is relatively little difference in scale between the largest and the smallest. This prevents any conclusive analysis of economies of scale for that area of activity. This does not mean that there are no economies of scale in the other activities; it simply means that, relative to the other explanatory variables, scale was not found to be amongst the most important. Savings from scale *could still potentially be significant*.

However, as part of its price review in 1999, Ofwat produced a separate, simple model, which was designed to estimate economies of scale for the water business as a whole. As noted above, the Competition Commission used (and one assumes therefore endorsed) this model when it examined two small water only companies that had appealed against Ofwat's price determination. No such model exists for the sewerage service, due to the limitations mentioned above, but there is no a priori reason to suppose that economies of scale are fundamentally different for sewerage. Indeed, it would seem strange that there are benefits, which would be available to a water only company, that would not be available to a theoretical 'sewerage only' company.

Ofwat's model for the water business is shown in Table 9.1.

Table 9.1: Ofwat model for the water service

Water service		Economies of scale
Data: June Return		Modelled cost: Log to the base e of total water service operating cost (£ million).
Explanatory variables:	Coefficient	
Constant	-2.6279	
Log to the base e of the number of billed properties (000s)	0.9612	
Form of model: Log to the base e of total water service operating cost (£m) = -2.6279 + Log to the base e of number of billed properties (000s) * 0.9612		

Applying this model, first to the three separate Scottish authorities, and then to the proposed Scottish Water, provides

a pointer to the level of savings in operating expenditure available within the water service, that would arise from a merger. This calculation is shown in Chapter 20.

I have estimated the potential savings in the sewerage service by applying the same coefficient of economies of scale that apply in the water service model.

ii) Head office and support services efficiencies resulting from the merger

The focus of my analysis of merger savings was on those activities that can be provided centrally to a larger organisation. Typically these are indirect, rather than direct, operating costs and would include areas such as administrative support, customer services and scientific services activities. This section covers both the base case and the case where a higher average salary level and higher overhead costs are assumed.

My analysis covers savings across five areas:

- labour costs (operating and capitalised),
- overheads operating costs,
- customer services operating costs,
- scientific services operating costs,
- asset disposals.

I used regulatory letters to request information on each of the above areas. My WIC 20 (Request for data relating to depots, labs & office buildings) and WIC 21 (Critical information for Strategic Review, special factors and queries on June Return submission) letters are the principal sources of information. There is also significant information provided in the annual regulatory return, which has also been useful in quantifying the realistic potential for merger savings. I have also taken some information from the annual report and accounts of the three authorities and I have discussed a number of issues with staff members of the authorities.

Labour costs (operating and capitalised)

Head office and support services costs tend to be dominated by the cost of employees. This cost appears both in terms of salary and related costs and in terms of office and other overhead costs. I have therefore designed a methodology to

identify what savings may be available as a result of the merger of the three authorities. My starting point was the responses by the water authorities to my WIC 20 letter on staff numbers employed in head office roles. I subtracted from these totals costs associated with call centre and laboratory staff. This information came from responses to my WIC 21 letter.

I added to these sub-totals the staff engaged in head office type functions (e.g. human resources), who are based at regional offices. I have also added back design, investment, data management and asset planning roles.

This results in a total staffing level for the three Scottish authorities in head office functions. As emphasised above, I am keen to ensure that there is no element of double counting and I am therefore making an assumption that total staff numbers would have been reduced by about a third as a result of the efficiency targets, to which each of the three authorities has separately agreed.

I therefore made a 35% reduction to adjust for pre-merger efficiencies. I estimated an average annual salary cost by referring to each authority's General and Support Employment Costs information provided in their annual regulatory return. Specifically, I used the information provided in the E1b (activity-based costing – water services) and E2b (activity-based costing – waste water service) tables. I have also added to this total the capitalised employment costs.

I calculated an average staff cost per head by dividing the total amount spent on salaries by the total number of people employed in indirect operating roles. I would expect that this assumption would favour the authorities, as empirical review of data from other companies suggests strongly that head office staff employment costs are always relatively higher. I therefore also examined the savings that would result, assuming average head office salary levels were 15% higher than the average salary in an indirect operating role for each authority.

I assumed that it should be possible to reduce total head office staff by about 50% as a result of the merger of the three authorities. My assumption is that the workload of this single authority will amount to half that of the current operations. This

potential reduction in headcount was then multiplied by the labour saving per head figure and a compound inflation rate of 2.5% for five years applied. This inflates the current saving by 13.1% to arrive at its 2005-06 value.

Overhead operating costs

The calculation of an overheads savings figure followed much the same process as the labour savings calculation. I have taken the General and Support Other Costs information from the annual return provided by the water authorities. Specifically, this comes from E1b and E2b tables. This total is reduced by 35% to separate out the efficiency drive currently underway in each of the authorities separately. Again, this has been done to ensure that I would not double count the potential for savings. I have then multiplied this total by the percentage potential reduction in head office staff. This number has again been inflated at RPI in order to calculate the efficiency available in 2005-06 money. As with labour costs, I also examined the savings that would apply were head office overhead levels 15% higher than the average for each authority.

Customer services operating costs

I have made use of the responses to my WIC 21 letter in calculating the savings available in this area. The areas considered include call centres, IT expenditure relating to head office, rent and rates relating to head office and travel and other expenses for head office staff.

For all travel expenses and salary related items, the figures were totalled and reduced by 35% (as above to reflect the current single authority targets). I have again assumed that the single head office would be 50% of the size of the three (more) efficient head offices and, therefore, I have estimated savings of 50% in the reduced expenditure figure. The current value of the savings is then inflated to reflect their 2005-06 value.

The items relating to Other (IT, hardware, software, peripherals, licences and helpdesk) and Indirect Support Costs allocation (share of rents, rates, electricity, etc.) were totalled and similarly reduced by 35% to reflect the single authority targets. I have again assumed a 50% reduction from

the merger of head offices. In addition, it is appropriate to assume a further 6% procurement saving on the single head office cost allocation. This reflects the advantages of scale in procurement. The value of these efficiencies was again inflated to 2005-06 prices.

The treatment of call centre costs was similar to that used for travel expenses, that is to say a 35% reduction to reflect single authority efficiency followed by a 50% reduction to reflect the move to a single authority.

Scientific services operating costs

The annual return E1b and E2b tables present the expenditure levels on scientific services. In addition to the 35% saving that should result from the separate authority efficiency target, I have assumed only a prudent 20% further saving. This saving has been limited by the fact that it may be proper to maintain more than one centre in Scotland for scientific services. The resulting savings have again to be inflated to take full account of inflation to 2005-06.

Asset disposals

The information to inform my assessment of the scope for asset disposals was provided by the water authorities in response to my WIC 20 letter. Whilst there would seem to be significant extra potential to dispose of short-life assets, these are excluded because they are not material in terms of disposal value.

I compared the property valuations submitted by East of Scotland Water Authority and North of Scotland Water Authority in their responses to WIC 20, with information on the current property market, which I obtained separately. West of Scotland Water Authority was unable to provide sufficient information on property values to allow a proper initial comparison.

The independent valuations were generally much higher than the authorities' estimates, but I decided it would be prudent not to adjust the authorities' estimates in my analysis.

I then calculated the ratio of property value to numbers of employees at each location, and in the case of West of Scotland Water Authority, substituted the ratio calculated for East of Scotland Water Authority. I was able to estimate, using

the calculated ratios, an indicative value for the assets that could potentially be sold, given the likely achievement of my efficiency target.

iii) Review of what has been achieved in other mergers

In trying to achieve the right balance between achievability and challenge, I wanted to review the levels of merger savings reported in practice, from the water and sewerage companies, other utilities, the public sector and the broader private sector.

I obtained information from a variety of sources, including:

- City analyst reports,
- annual reports and accounts,
- water company staff,
- company announcements.

The information came in a variety of forms, and in order to obtain meaningful comparisons, I decided to calculate savings attributed to mergers as a percentage of turnover. In a few cases, operating cost was the only valid measure against which to gauge merger savings, and was used instead of turnover.

I was then able to compare the results of the various methods used to estimate the scope for merger savings, on a like for like basis, to assess how robust my target was.

c) Caution in target setting

I have adopted a conservative approach in my assessment of the scope for merger savings. However, I wanted to be sure that there could be no question about the achievability of my target. I therefore decided to base my target on achieving 80% of the assessed scope for merger savings. This is in line with my approach to capital and operating cost efficiency. I have, however, balanced this favourable assumption for the authorities with the judgement that the full target for asset disposals should apply.

Section 2: Chapter 10

Methodology: Financial Modelling

a) Introduction

This chapter describes the financial model used to calculate my recommendations on revenue caps.

I explain how I developed and tested the financial model and outline how the model works. I then explain the process used to verify the model. Finally, the chapter sets out how I dealt with risk and uncertainty in my assumptions.

b) Need for financial modelling

The main aim of my Review is to recommend annual revenue caps for the authorities and/or the proposed Scottish Water. I have to be sure that my recommendations are consistent with the medium- and long-term needs of the industry and are consistent with the interests of customers. I do not want simply to swap present problems of under-investment for financial problems tomorrow. I have therefore developed a sophisticated financial model, which is capable of analysing a range of different potential outcomes.

c) Scottish context

I have ensured that the financial model is consistent with the requirements of the Scottish Executive's resource budgeting. The model also includes the fees associated with PPPs as a separate line item. Spend to Save is also identified separately.

The model allows me to set a revenue cap that is consistent with public expenditure constraints and various profiles of investment and efficiency. I can also vary the extent to which efficiency targets are achieved.

d) Development of the financial model

I first built a simple spreadsheet model, which permitted me to understand the impact of investment, borrowing and levels of efficiency on the charges faced by customers. This model is deliberately simple and has played two roles. It is a useful check on the answers generated by the full model. It has also been used to run the risk analysis.

This initial model included only a relatively narrow range of assumptions. These included:

- capital efficiency,
- operating cost efficiency,
- capital expenditure inflation,
- operating cost inflation,
- base operating costs,
- annual investment levels,
- prices for domestic and non-domestic customers,
- non-domestic revenue retention scenarios.

I could only model one scenario in this model.

I also did not include the functionality to change working capital. The price increases and revenue retention scenarios were kept the same for each customer group and I did not separate the capitalised labour element of the capital spending.

The output of this model was a simplified income and expenditure statement and a cash flow statement.

I then built a first version of the current financial model that I used to calculate the revenue caps. This model was refined and checked by Cap Gemini Ernst and Young as one of the outputs of the Information Project. The model included a full set of assumptions, which covered all the parameters outlined below:

- operating cost inflation,
- capital investment inflation,
- depreciation and asset useful life,
- working capital,
- interest on new loans,
- existing loan balances including interest rate and maturity assumptions,
- investment over the period and investment phasing,
- operating cost efficiency targets,
- base operating costs,
- capital efficiency targets,
- capitalised labour scenarios,
- public private partnership expenditure,
- Spend to Save: operating costs,
- Spend to Save: capital costs,
- level of service increments,
- customer revenue retention,
- market growth,
- price increases.

Figure 10.1: Capital spending

- Investment expenditure for infrastructure and quality investment based on central option B from Quality & Standards.
- Capital expenditure efficiency targets applied to infrastructure and quality investment expenditure.
- Separate capital expenditure targets applied to capitalised labour costs.
- Spend to Save capital expenditure based on a proportion of the Spend to Save budget, expected to relate mainly to IT.



Generates level of investment spend that has an impact on cash outflows and fixed asset additions in the balance sheet.

The model also included a functionality that allows me to run a range of different scenarios. It is possible to model 720 different scenarios within one version of the model. This allows me to assess the impact on prices and public expenditure of all of these scenarios.

e) Output of the model

The financial model produces financial statements covering a period of 19 years. The model starts with the audited financial results of the authorities for the year 1998-99. The final year in the model is 2016-17. The financial information for the years 1998-99 and 1999-2000 is taken from the audited accounts. The financial information for 2000-01 is based on the F-Table of my annual return. The authorities have confirmed that these figures are consistent with their statutory accounts for 2000-01. The model then calculates the position for each of the years to 2016-17.

The output of the model is a set of financial statements. These are significantly more detailed than in the earlier, simple model. They include a full income and expenditure account, balance sheet, cash flow, loans breakdown, assets and depreciation schedule and a summary of key performance criteria.

f) Model inputs: balance sheet and cash flow items

i) Capital investment

I have split capital investment between infrastructure investment and other investment. This is in line with the central option of the Quality and Standards programme. Infrastructure investment covers the annual expected expenditure to maintain the infrastructure. The other investment category relates to 'quality' spend. I have divided the total between the expected useful lives of the assets to be created. I have phased the capital expenditure to generate the most favourable price profile for customers and to ensure that there is no risk to the public expenditure constraint.

I have applied capital efficiency targets to my profile of capital expenditure. These targets are in line with those agreed with the authorities in May/June 2001. I have set a separate efficiency target for capitalised labour costs. This target is the same as the target that I set for operating costs.

ii) Spend to Save

I also expect that a proportion of the Spend to Save allowance that I am making available to the water authorities will be in the form of capital. I have assumed that this is 25% of the total allowance. The useful life of assets created by Spend to Save capital spending will be three years. I have not applied any efficiency target to the Spend to Save allowance. I have allowed the majority of the Spend to Save allowance in the first two years of the Review period. I expect the authorities to want to make quick progress in achieving the efficiency targets and my phasing of Spend to Save reflects this.

iii) Other assets and liabilities

I have calculated working capital ratios as a percentage of revenue. I analysed the historical ratios of the authorities to identify appropriate assumptions. I have assumed cash at hand to be zero. I have likewise assumed no provisions from 2001-02 onwards. My assumption is that all 'normal' provision costs (e.g. pension holidays) are included in Spend to Save.

iv) Government and other loans

Government and other loans fund the deficit of customer revenue to the cash outflows. The cash outflows comprise:

- capital investment,

- net interest payments,
- changes in working capital,
- repayments of loan balances,
- operating expenditure.

g) Model inputs: income and expenditure account

The inputs to the income and expenditure account are outlined below:

i) Revenue requirement

I have calculated the revenue cap at the level that minimises the level of charges to customers and is consistent with a sustainable industry. I have therefore ensured that the industry

has sufficient resources available to operate its existing assets to fund the capital expenditure necessary to maintain the existing assets and meet the improvements in level of service required by the Quality and Standards process. The revenue caps are on the basis that efficiency targets are achieved (unless I have assumed otherwise) and that the public expenditure available is not breached. The revenue increase is not the same as a price increase. The revenue reflects movements in the chargeable base of the industry and changes in price.

The revenue requirement is calculated as shown in Figure 10.3.

Figure 10.2: Cash flows

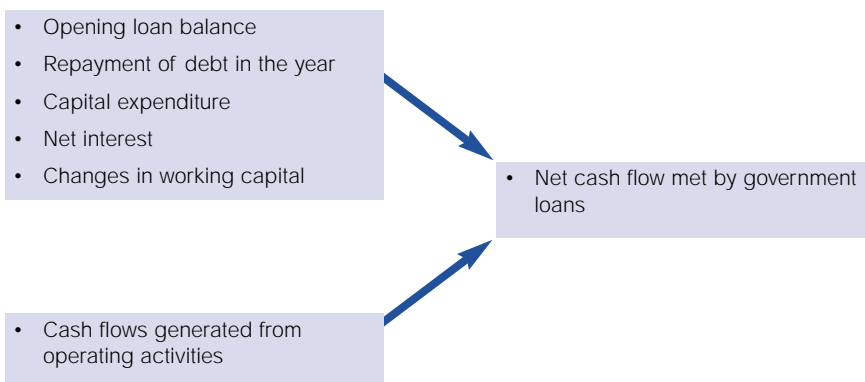
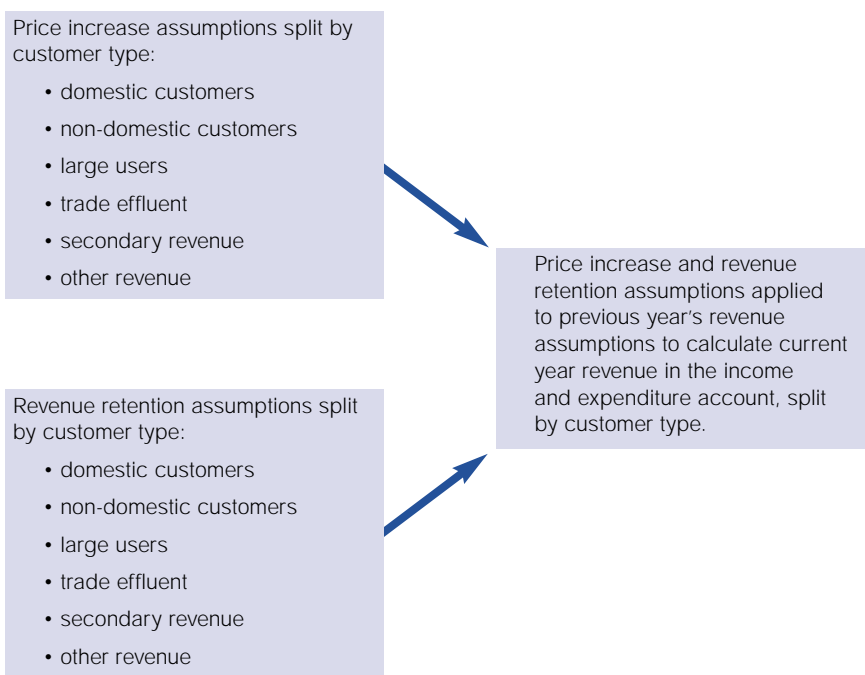


Figure 10.3: Revenue requirement



ii) Operating costs

Base operating costs

Base operating cost is the cost associated with providing the current level of service. The figure excludes the additional costs allowed for improvements in levels of service and growth. The base operating cost figure includes:

- manpower costs (excluding any capitalised costs),
- materials and consumables,
- other operational costs,
- bad debt,
- revenue grant.

I have used the year 2000-01 as the base year, since this is the most up-to-date information available on the authorities' current levels of operating costs. I have adjusted future years' base direct operating costs to take account of inflation.

iii) Efficiency targets on base operating expenditure

I have applied efficiency targets to base direct operating costs including inflation, but excluding the amortisation of grants and contributions. The efficiencies are phased to give management time to change current practices. The efficiencies to be achieved over the five years is the difference between the actual 2000-01 controllable operating costs and the 2005-06 costs that I have allowed.

Figure 10.4: Efficiency targets on base operating expenditure

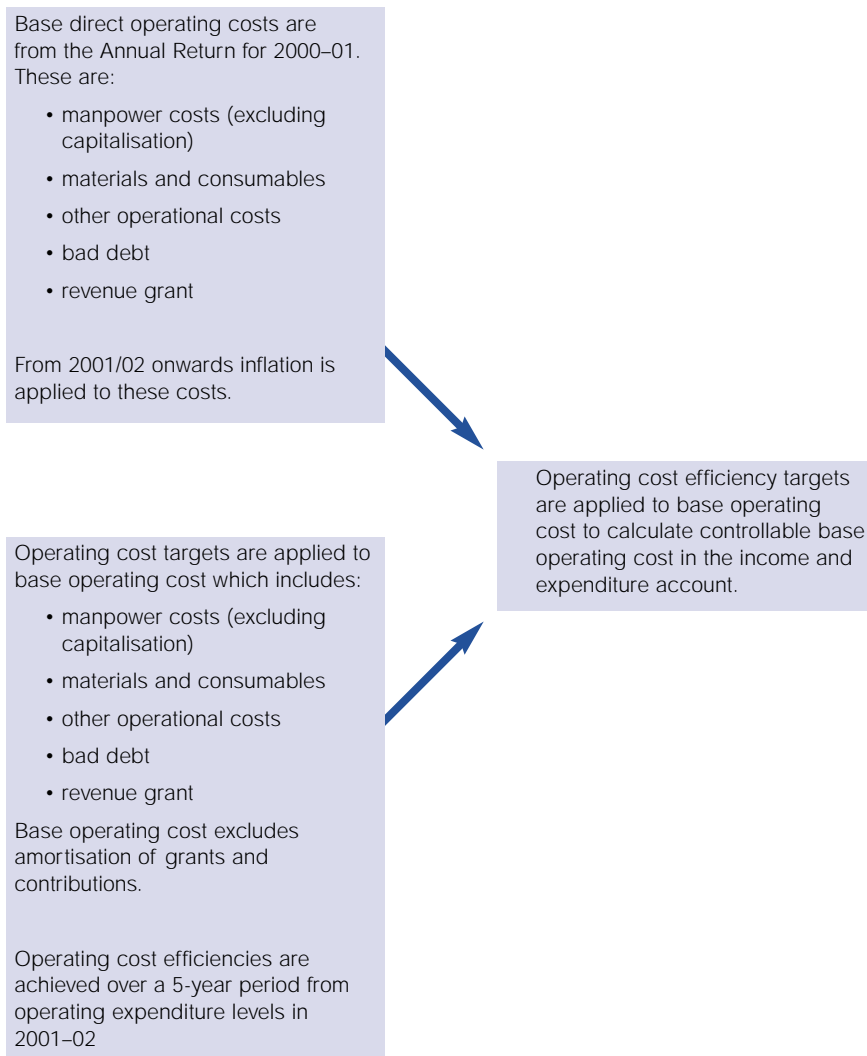
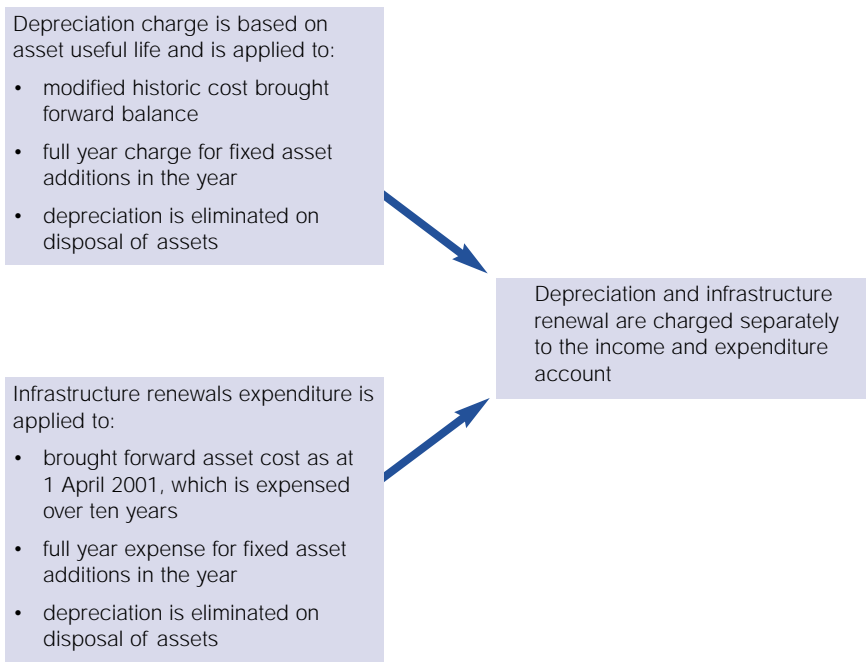


Figure 10.5: Depreciation and infrastructure renewal**iv) Other costs****Depreciation charge**

I have calculated depreciation on the modified historic cost of assets (i.e. (opening cost + additions cost) * Construction Operators Price Index (COPI)).

I have charged depreciation in line with the expected useful life of the asset. I have therefore depreciated an asset with a four-year useful life at 25% per annum.

I have applied a full year's depreciation charge to all additions in their year of purchase. Effectively, I have assumed that all assets are purchased on the first day of the financial year.

I have eliminated accumulated depreciation on disposal of an asset. I have assumed disposal at the end of the asset's useful life. I have also assumed that the asset has no residual value at the end of its life.

I have based the depreciation revaluation on the existing accumulated depreciation increased by COPI.

Infrastructure renewals expenditure

I do not depreciate infrastructure assets. I charge the annual actual expenditure for maintaining the network's operating performance in the long run through the income and expenditure account. I have expensed any infrastructure balances as at 1 April 2001 through the income and expenditure account. I have done this over ten years to eliminate these balances gradually. I have charged any additional annual expenditure on infrastructure assets directly to the income and expenditure account in any year after 2002.

Interest payable

I have calculated the interest payable on both embedded debt and new debt. The allowance for interest payable takes full account of all debt service costs that prudent treasury management would incur. Interest on new loans is calculated at 4.8%, which is based on an expected real premium on debt of 2.3% plus estimated retail price inflation. New loans are equal to the gross cash outflow in the year. This comes from the cash flow statement. I have used the loans note in the authorities' report and accounts to calculate the interest costs of existing debt.

Table 10.1: Asset lives

Asset life	East	North	West ¹
Spend in the year (infrastructure)	Infrastructure assets	Infrastructure assets, aqueducts, dams, reservoirs, sea outfalls, sewers, sludge pipes, water mains	Infrastructure assets
1 year		Investigations, maps and network records	
3 years	Spend to Save, computer equipment	Spend to Save, computer equipment,	Spend to Save, computer equipment
4 years	Ship cost, vehicles	Vehicles, small commercial vehicles	Vehicles and plant
5 years	Fixtures and fittings	Loose tools, mobile plant	Fixtures and fittings
6 years	Large commercial vehicles	Large commercial vehicles	Vehicles and plant
7 years		Fixtures and fittings, laboratory equipment, other general plant and equipment	
10 years	Plant lighting, temporary buildings, telemetry equipment	Mobile plant and equipment, plant lighting, telemetry equipment, PFI assets	Vehicles and plant, control and instruments, leasehold improvements, telemetry equipment
15 years	Fencing, telemetry equipment	Fencing, operational structures	
20 years	Buildings lifts, filter media, plant gantry crane, process plant, pumps	Process plant, pumps	Mechanical/electrical operational property
25 years	Carparks, riverworks, telemetry equipment		
30 years	Spillways, steel towers		
40 years	Plant pipework, weirs	Filter media, lifts, overhead gantry cranes, river protection works, water towers (steel), weirs	Mechanical/electrical operational property
60 years	Buildings, land and infrastructure boreholes, bridges, catchwaters, concrete towers, operating buildings and structures, storage reservoirs, lagoons	Boreholes, bridges, operational and office buildings, inter-process pipework, roads and carparks, operational structures, water towers (concrete)	Buildings and civil operation property
80 years		Lagoons, service reservoirs	
100 years		Catchwaters, leased land	
Infinite		Land	Land

Exceptional/one-off costs

I have identified any exceptional and one-off costs for the years 1998-99 to 2000-01 from the authorities' audited accounts and from their annual returns. I have not allowed for any one-off costs from 2001-02 onwards with the exception of Spend to Save.

h) Accounting policies

I have prepared the model on a resource accounting and budgeting (RAB) basis for the years 2001-02 to 2016-17. The main impact of RAB on the financial statements relates to the revaluation of fixed assets on a modified historic cost basis.

I have applied COPI inflation to the asset value of the authorities at the start of their operations in April 1996. I have revalued assets each year to 2000-01. My model includes this cumulative revaluation from April 2001 as RAB took effect from that date. I have asked the authorities to submit cumulative revaluation figures. I compared the estimates of the authorities and my office and included the more conservative estimate. I revalue assets annually after April 2001 based on my estimate of COPI. I have made the following adjustments to take account of RAB:

- I adjusted the fixed asset net book value on the balance sheet to reflect the cumulative revaluation of cost and the additional depreciation on the revalued asset.
- I established a revaluation reserve on the balance sheet in 2001-02. I based this on the cumulative revaluation brought

¹ Operational property for West of Scotland Water Authority includes: clear water storage tanks, raw water storage tanks, service reservoirs, sewage pumping stations, sewage treatment works, water pumping stations and water treatment works.

forward as at 1 April 2001 and the revaluation in the year 2001-02. This reserve is adjusted each year.

- I reduced the income and expenditure reserve on the balance sheet for the accumulated depreciation resulting from the revaluation of assets as at 1 April 2001.
- I made an additional charge to the income and expenditure account to reflect depreciation on the revalued fixed assets.

I used the asset lives given in Table 10.1 in the model. The information for the asset lives was provided by the water authorities.

Tax would be calculated according to the rules on corporation tax. I have anticipated no tax charges during this regulatory period.

i) Verification of the financial model

My initial version of the model was reviewed and improved by Cap Gemini Ernst and Young. My staff have checked this final version of the model extensively over more than two months. A number of sensitivities have been calculated and a range of reasonableness checks made. Staff have also developed a detailed, audited trail to support the inputs to the model.

I asked Scott Moncrieff, a leading Scottish firm of Chartered Accountants, to audit the model. They found the model to be accurate in all respects and to represent fairly the challenges faced by the water authorities. Their report is attached as Appendix B to this Review.

j) Prudency and sustainability for customers

I consider the assumptions used in the model to be prudent. My intention throughout this Review is to challenge the management of the industry, but not to set unrealistic targets. I want to be sure that customers benefit over the long term and that problems are not simply delayed for another day. I believe that within the model there are a range of assumptions on working capital and on depreciation (for example, full year's depreciation in year of purchase) that are clearly prudent. This should help ensure that there are no unpleasant surprises being stored up for the future.

k) Application of annual inflation

I input all information to the model exclusive of inflation. The model then uses an input assumption to calculate the income and expenditure account, balance sheet and cash flow in outturn prices. The input assumption is based on the retail price index (RPI) for all inputs excluding capital investment. I have applied COPI to all capital expenditure and asset values.

l) Risks and uncertainties

i) Definition and rationale

I have included a range of scenario analyses to check the impact of my assumptions. This allows me to be confident that I have fully understood the range of potential outcomes. I developed scenarios that covered the following areas:

- bad debt,
- investment,
- efficiency,
- revenue retention,
- grant and capital,
- price/revenue.

The scenarios range from 1 to 5, where 1 represents the most pessimistic standpoint and 5 the most optimistic standpoint. Taking the example of non-collection of revenue:

- Scenario 1 - presents the view that the authorities' position is significantly worse with regard to the collection of revenue.
- Scenario 2 - the authorities are in a better position in relation to the collection of debt than in Scenario 1.
- Scenario 3 - this is the position in which I believe the authorities should be.
- Scenario 4 - this would put the authorities in a better position than I am expecting.
- Scenario 5 - is as good as it is possible to expect.

The scenarios are generated either from my review of other utilities or from information provided by the authorities. These scenarios can be combined in different ways in order to assess the sensitivity of the model to each scenario.

ii) Risk analysis

I was asked by the Scottish Executive to complete a formal risk analysis. I have used 'Monte Carlo' analysis techniques to examine all possible outcomes arising from a given set of uncertainties and to assign probabilities to those outcomes. I used the 'Predict! Risk Analyser' software package to complete this analysis.

The most material assumptions were those relating to the efficiency targets for operating and capital expenditure. I therefore applied my risk analysis to these elements, separately and in combination. I was particularly concerned to ensure that my recommendations on revenue caps would avoid undue risk to public expenditure limits, in the event of any underperformance of either or both efficiency targets.

I began my risk assessment by considering the range of possible outcomes on the performance against the efficiency targets. I adopted profiles of risk, related to different sets of circumstances. For example, I adopted a particular profile of risk for the possible circumstance that contracting out would feature significantly in pursuing efficiencies. For each profile, I determined a most likely outcome, in terms of percent closure of the efficiency gap, and a likely range of uncertainty around that figure. I then expressed these in the form of a mean and standard deviation of a normal statistical distribution.

For the Monte Carlo analysis, I used the simple version of the financial model described at the start of this chapter. It was not necessary to model the financial projections in detail in order to assess the extent of risk on public sector funding, and the risk analysis software was more readily adaptable to the simple financial model.

I applied the chosen profiles, expressed as parameters of the normal distribution, to the efficiency targets within the simple financial model. The projections of public sector funding under RAB accounting rules were then analysed statistically to define their risk profile. I was able to compare this output with the constraints outlined in the Minister's commissioning letter.

Section 3

Competition

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Section 3: Chapter 11

Competition: Development of Competition

The broad issue and potential impact of competition was discussed in general terms in the introduction to this Review. In this chapter, I describe in more detail how competition is likely to impact on the existing service providers. I conclude that competition will bring major benefits to all customers and does not need to be the major threat to the revenues of the Scottish water industry that has been predicted. This will depend upon the achievement of efficiency targets by the management of the Scottish water industry. Their focus needs to be on cost reduction and movement rapidly towards the 'efficiency frontier' and, no less importantly on developing tariffs that reflect the true economic costs of supply. The only significant revenue impact if management achieve efficiencies will be in the water and sewerage 'retail' activity, but proper allocation of costs can keep this to a minimum. Competition will benefit customers precisely because it will force costs to the lowest sustainable level (as it has in other utilities' services, see Chapter 12) and this will ensure that we, as customers, will get the lowest sustainable prices. It is therefore in the customer's interest.

a) Introduction

Generally, customers have benefited from competition in three ways, each of which has typically impacted on the other two:

- **Choice:** Customers are able to exert a lot more influence on their current supplier if they are able to opt for an alternative supplier. This choice tends to focus the incumbent supplier on addressing the issues raised by the customer.
- **Lower prices:** There is considerable evidence that competition has led to lower prices for customers. This has come about through very significant improvements in capital and operating efficiency. Suppliers have sought pro-actively to identify efficiencies in order to position themselves better in the service they offer to customers.
- **Better levels of service:** For some of the highest value customers, a few pounds off an annual bill are significantly less important than improved service. This may, for example, result from convenience in payment method. Some customers value the receipt of a single bill for utility services and a single direct debit each month. Utility suppliers have as a consequence tried to outdo their competitors with the level of service they offer.

It is common to regard the Competition Act 1998 as the starting

pistol on introducing competition into the water sector. Whilst this Act may have been the catalyst that brought customer benefits, such as choice and efficiency, to the water sector, it would be incorrect to state that competition did not exist prior to the Act. Competition to provide solutions to the water and effluent needs of major customers already existed – via the so-called "off-network" deals. Brokerage (retail) deals have also existed on a small scale.

The Act potentially makes competition at the start and at the end of the value chain possible without replicating the pipeline network, which is a clear natural monopoly. Common Carriage where the pipeline operator is obliged to carry the water or waste of a third party would be the mechanism to facilitate this competition.

Incumbent monopolists ought to embrace competition. Those companies who have looked at competition as an opportunity have typically thrived, whilst those who have tried to resist and follow a reactive strategy have often found life more difficult. Three elements are important in the strategy of an incumbent that seeks to benefit from competition.

- The first key issue is to understand how competition for revenue can arise and what threat it may pose to the on-going financing of obligations.
- The second is to quantify the effect of competition for revenue in order to understand which customers are most likely to be vulnerable if an alternative service is offered. This is the subject of Chapter 13.
- The third factor is to develop a thorough understanding of the costs incurred in providing a service to customers. It is vital that these costs cannot only be split by customer, but also by business process.

Understanding costs and the need for transparency from a customer perspective is the subject of Chapter 14. The benefits of the incumbent seeking to exploit the opportunities presented by competition do not accrue solely to customers. Employees and shareholders have also benefited.

b) Viability of competition

In many markets competition will develop naturally. In other markets, the development of sustainable competition may need intervention by government or by regulation. The

electricity and gas industries are good examples of how government policy has forced competition into a sector and brought about significant benefits to customers. This was done by ensuring that the natural monopoly element in the provision of utility services was ring-fenced and the other activities were allowed to become competitive.

The following matrix can be quite useful¹:

Table 11.1: Competition matrix

Feasibility of competition	Desirability of competition		
		Yes	No
Yes		Normal market	Cream skimming through market power
No		Dominant player limits entry	Natural monopoly

Most analysts used to consider that competition in the utility services was not feasible. This was because utilities were regarded as natural monopolies. However, recent history has shown that competition did not develop because there were some elements of natural monopoly and other elements of the value chain which, although they were clearly not natural monopolies, the monopolist was too dominant and it had not been possible to enter the market. A good example is meter reading. For example, there is clearly no obvious benefit in each utility service reading their own meters, and hence there is no natural monopoly. However, it took regulation to disentangle meter reading from the natural monopoly and to facilitate competition in this area.

The perceived infeasibility of competition was therefore partly due to natural monopoly and partly the result of a dominant player who could limit entry. Claire Spottiswoode, former Director General of Ofgas, viewed ring-fencing the natural monopoly element² in the gas industry as the key to the competitive supply market in that industry.

In order to understand the likelihood of competition in the water industry, it is important first to identify the scope of the natural monopoly. Then, any other activities, where it may be simply the dominance of a major player that is preventing the development of competition.

c) 'In the market' versus 'for the market'

The distinction between 'for the market' and 'in the market' competition is useful in assessing the development and progress of a competitive market. Competition for the market will tend to drive further efficiency into any industry and, in the public sector context, will undoubtedly bring benefits to customers. However, genuine competition in the market – where feasible – will go further in improving service levels and reducing costs for customers.

The water industry is not fundamentally different from other utility businesses in that it is vertically integrated and as such the water services provider is involved in more than one activity or line of business. Each of these activities, whilst discrete, complement and build off each other in such a way that the service required by customers is delivered. Moreover, each of these activities has quite distinct characteristics and requires different competences, if it is to be done efficiently and effectively.

If one is to argue that competition will not bring benefits to customers, it must be possible to say that the 'agency' costs of separating activities or of contracting out will more than outweigh the benefits that would accrue from the provision of an activity by a specialist. In most industries, empirical observation proves that these agency costs do not outweigh the benefits. Few, if any, industries today, whether capital intensive (electricity, oil and gas) or not, for example, fast moving consumer goods are wholly vertically integrated.

Is the water sector really that different? The fact that many companies find opportunities in a sector with limited growth potential, and where total returns are limited (so that opportunities rely on a lower cost solution being found) would suggest strongly that it is not.

i) 'For the market' competition

This type of competition can exist even where the vertically integrated regional monopoly holds sway. Essentially, it can manifest itself in two ways: a proposal to the incumbent monopolist to provide a service at lower cost or higher quality than the incumbent can achieve; or an offering to a customer to replace the existing vertically integrated supplier with another. The latter is essentially the inset appointment, which is the only real competition that exists at present in England and Wales as

¹ Kay & Vickers, 1988 *Regulatory Reform in Britain* Economic Policy, 19.

² The Institute of Economic Affairs 2nd Annual Conference, 20 June 2001: Water 2001.

far as customers are concerned. This is very limited, accounting for only 0.2% of total industry revenues. 'For the market' competition assumes that there are a series of one-off opportunities. It assumes that the geographical (or other) monopoly will not substantially erode and that essentially ownership of assets will remain in the same hands. The only real way to be more competitive is to move the boundaries of business processes slightly, or to generate value opportunistically through innovation and efficiency within the existing integrated chain of business processes.

The benefits to customers from this type of competition can be quite significant as costs will be driven down and service levels will be improved. Customers are unlikely, however, to be presented with any real choice. It is therefore better than the traditional monopoly service provider, but not as good for customers as full blown in the market competition.

ii) 'In the market' competition

In the market competition will result when there are genuine markets for the separate business activities that are conducted by water and sewerage suppliers. This presupposes the fragmentation of the value chain at least in part along functional lines. The most obvious such split may be between the wholesale and retail functions, although in the market competition could develop in other areas of the value chain.

d) Competition for the market

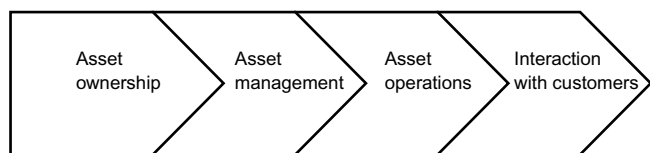
Competition for the market is likely to develop in industries where there are large elements of natural monopoly, or where there are significant agency costs that provide an advantage to an incumbent over a new entrant. It is most likely in situations where competition in the market is not regarded as feasible. This would not apply, for example, in the footwear business where competition in the market is intense. This is the normal market shown in the matrix earlier in this chapter. In the footwear market, there is significant competition between manufacturers, between wholesalers and between retailers. Competition at each stage of the process helps keep prices down for customers. The situation is dynamic and a manufacturer or wholesaler can do well one season and badly the next. Indeed competition can, in times of over-capacity, occur between retailer and wholesaler.

For the market competition may help bring value to customers

through lower prices where there are few opportunities for the development of in the market competition through the functional value chain. Most of the activities of a water and sewerage undertaker seem to contain significant elements of natural monopoly and therefore competition may be more likely to develop for the market than in the market. The notable exception to this appears to be retail (and potentially the consequent demand for common carriage).

Competition for the market can take place at any point along a business process value chain. The basic business processes of a water and sewerage undertaker are shown in Figure 11.1.

Figure 11.1: Organisational structure of water business



For the market competition can take place across the entire value chain, when the asset owner is bought out. The incumbent can also be replaced for any single process (in part or as a whole). The owner and manager of the assets require that they be operated. It is possible that competition will develop to operate the existing assets either as a whole or within a particular region. This does not impact upon the service received by the end customer (if the contract has been properly concluded), nor does it influence ownership of the assets. However, it is competition nevertheless. Competition for the market will reduce costs and should improve levels of service.

The only criterion that needs to hold true if benefits are to accrue to customers is that interest in tendering for a contract is such that there is genuine competition between tenderers. Potential new entrants will come forward to offer their services and therefore develop for the market competition, but only if there is an opportunity for the third party to provide a service either significantly better or at lower cost. This may result from innovation or from greater efficiency.

The next section describes the various elements of the value chain depicted above. These descriptions, and the assessment of the key requirements for success in each activity, are

essential to an understanding of the likelihood of for the market competition developing.

i) Explanation of activities

Asset ownership

The water authority owns the assets that it uses to carry out its business. The actual value of these assets is significantly in excess of the accounting balance sheet value. Indeed, many assets would be impossible to value in any realistic way because they are genuinely irreplaceable. The assets include reservoirs, water and waste treatment works, the water distribution and sewage collection network, and also depots, vehicles and other equipment.

Under the public sector model of the Scottish water industry, the Scottish Executive strategically directs the water authority's ownership of the assets on behalf of all of us. Ownership in this context requires the Scottish Executive to identify the needs of stakeholders and set appropriate levels of risk. It determines, for example, how often customers can tolerate hosepipe bans or sewer blockages.

Asset management

The water authority has a duty to provide water and waste water services. This requires decisions on a day-to-day basis to be made about assets. These questions are basic, but fundamental, and will determine the efficiency over the medium to longer term with which the service will be delivered. The questions concern if assets should be bought, what should be bought, when and how they should be operated.

Asset management strives to minimise risk in line with the priorities set by the owner. The water authority needs to ensure that there is both a financial and an engineering plan, which will present a clear vision of the asset mix required at a specific time in the future. This vision should be supported by an investment plan, which comprises the projects to be implemented, prioritised by compliance deadline, cost and benefit.

Asset management is both strategic and dynamic and continuing reassessment is vital.

Asset operation

Asset operation is about the delivery of a service on a day-to-day basis. Asset operation ensures that water is properly treated and delivered to customers and that sewage is collected and properly treated.

The asset manager, who is responsible for the whole portfolio of assets, sets operational policies. The asset operators make no decisions, beyond those delegated to them by the asset manager. The aim is to ensure that responsibility and authority remain in alignment.

Retail

The retail of treated water involves the direct, customer-facing activity in the supply of the service. This would include the billing process and collection of charges, the call centre, and responses to customer enquiries, complaints or requests for information. It would also include liaison with the network or treatment plant operator in order to be able to deal effectively with customer issues.

At the present time, the local authorities currently issue bills to domestic customers for water and waste water charges and collect the charges on their behalf. The water authorities deal with all other interactions with domestic customers. The water authorities deal with all retail activities in the case of non-domestic customers. This includes billing, but it also includes key account managers who are responsible for understanding the key needs of the largest customers and ensuring that the service delivered is appropriate.

ii) Key requirements for success in each functional activity

Each of these four areas requires very different skills and resources. There are also quite different risk profiles pertaining to each activity. In some cases it may be appropriate to consider inviting a third party to tender to provide the service or a part thereof. In others, it would clearly be inappropriate, as the activity is seen as a key skill or as a constraint. A third party will, however, only be prepared to provide a service where he can see that a reasonable return is available given the investment required. Ownership of assets by the public sector is taken as a constraint and is therefore not discussed further.

Asset management

Asset management is a strategic, analytical discipline, which seeks to calculate accurately risks and fully assess the financial and other costs of addressing these. Regulators have consistently maintained a view that this is a core skill, which should not be outsourced if the licence holder (the owner of the assets) is to be held responsible for service delivery to customers. I agree with this general sentiment but recognise that, as this is such a key skill, creative solutions may need to be found to attract these capabilities to the Scottish water industry. Any solution will have to ensure that there is sustainable, long-term development of competency in this area by the proposed Scottish Water or by the current three authorities.

Asset operations

Reliability, a partnership approach and cost effectiveness are the key factors for success in this area.

Interaction with customers

The retail function is quite different from others that are described above. There is much greater heterogeneity in the customer base than there would be for any of the other business processes discussed above. This may mean that the level of service may be more important than simple delivery of a basic service at minimum cost. Issues such as convenience and responsiveness may be at least as important as a few pence off a bill. Other services (such as gas, electricity or telephone) on a single bill may be more important for some people.

The management of a customer base is not an easy task. It involves far more than the generation of a bill for a service that has been provided. It concerns the exploitation of opportunities that each customer presents. This is the essence of customer relationship management. Effective management of the customer database requires a significant investment in information technology. This means that economies of scale

and scope become very important. The investments relative to capital spending elsewhere in the value chain may not seem large, but the benefits may be more difficult to realise.

iii) Likelihood of competition for the market developing

It is likely that significant competition may develop for the asset operations services. It has been estimated by City analysts that this could amount to as much as £2.85 billion per year, or more realistically £1 billion over the next 4 to 5 years (35% of total spending on operating assets)³. There are a number of organisations, including all of the English companies and many specialist contracting companies, who are likely to be interested in tendering for this sort of opportunity.

It seems likely, given the creation of the Glas Cymru⁴ not-for-profit company, detailed in Chapter 12, that the competitive dynamic of this sector of the industry is set to increase. This reflects the relatively low barriers to entry. The contracting of operations to United Utilities by Welsh Water has, not surprisingly, been heralded as a model of competition for the water industry. Particularly striking was the degree of interest that was expressed in the outsourcing contracts offered by Welsh Water. Severn Trent was sufficiently interested in the potential opportunity that it challenged the original proposal by WPD to involve United Utilities in the operation of the water assets. In the end, in excess of six offers were received and the price tendered was significantly lower than the original agreement between WPD and United Utilities. It seems likely that there is a more developed market for out-sourcing of contracts than was previously thought. It is possible that in Scotland equally competitive bids for any out-sourcing opportunities could be encouraged.

The competitive dynamic of this activity depends to a great extent on the competition in the market of tendering for contracts. A competitive tendering process should provide competitive forces that lead to greater efficiency and result in service and price benefits to the consumer. Shorter contracts would also probably increase competition for the provision of these services. This is because the contractor will be keen to

³ In a report entitled *O&M Markets* dated 5 September 2000, Robert Miller-Bakewell of Merrill Lynch forecast that 35% of the operation and maintenance market could be outsourced by 2005.

⁴ Western Power and Distribution acquired Hyder Plc which owned both SWALEC and Welsh Water. WPD had no interest in retaining the water business and proposed to sell it on to Glas Cymru, the not-for-profit holding company. Welsh Water (Dŵr Cymru) is a subsidiary company of Glas Cymru. The operations of the business were to be run by United Utilities under contract to Welsh Water (Dŵr Cymru).

perform to a level, which ensures that they are in a strong position when the contract is being renewed. It would also be important to ensure that the terms of the contract do not limit future competition, and that there is an onus on the winner of any operating contract to pass their activities over to another party at the end of the contract period.

It is also important to note that the water industry is global, and so too is the competition, as not only UK companies can compete for contracts.

The example of Welsh Water is also interesting in the customer arena. Welsh Water had looked to tender the provision of retail services to its customers by a third party. It has encouraged for the market competition. Thames Water won this contract and is therefore responsible for providing all of the customer facing and related back office services. The bill will still be issued under the name of Welsh Water and there is likely to be a small note on the bill that states that services are provided on behalf of Welsh Water by Thames Water.

If the Scottish local authorities had won the billing contract in a competitive situation, then this would not be any different, economically, to Thames Water being paid to bill Welsh Water's customers on its behalf. For the Scottish industry it may be appropriate to assess whether contracts with the local authorities remain the best way to deliver the billing and collection service. It is possible that some other organisations may be able to bill and collect more efficiently.

e) Financial implications of for the market competition

For the market competition would not impact on revenues of the incumbent authority in Scotland. Off-network deals are sometimes regarded as a form of for the market competition

and these could impact on the revenue line.

For the market competition will, however, reduce the costs faced by the incumbent supplier. This is likely to bring benefits by providing more options to management in how service could be delivered at best value to customers.

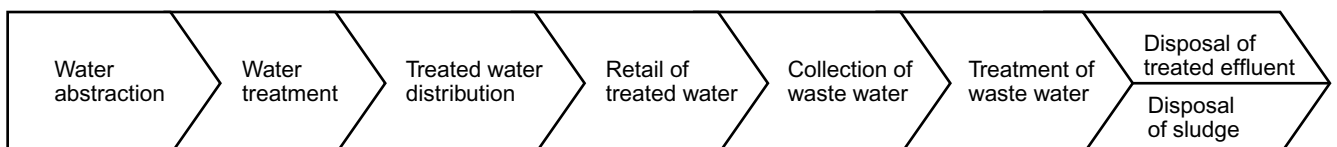
f) Competition in the market

Customers will benefit from the development of competition in the market. So too will the owners of assets. Consequently, in Scotland, customers would benefit as customers and as part owners of the assets. They will benefit from better levels of service, better efficiency and more choice. A ready market will also ensure that these benefits can be sustained over the long term. This adds value to the owner and benefits the customer by removing many of the risks associated with service delivery.

A useful way to consider opportunities for competition 'in the market' in the various activities that are integral to the supply of water and waste water services to customers is to break them down into a value chain. I will begin by providing a very brief overview of each functional activity, and continue by analysing what I see as the key criteria for success in that activity.

My analysis uses the framework developed by Professor Michael Porter of Harvard Business School - the five forces model - in order to predict the likelihood of competition developing at each stage of the value chain⁵. This framework takes full account of difficult-to-acquire competences and significant economies of scale. Ultimately, competition will only develop where the returns that are available to the new entrant are commensurate with the risk to capital that would have to be invested.

Figure 11.2: Water authority value chain



⁵ This framework is outlined in full in *Competitive Strategy* (The Free Press 1980). A summary of the framework is outlined in chapter 6.

Porter's five forces have been used to analyse the potential for competition within each of the functional activities. The five forces are:

- ease of entry
- buyer power
- supplier power
- availability of substitutes
- the competitive dynamic of the industry.

i) Explanation of activities

Water abstraction

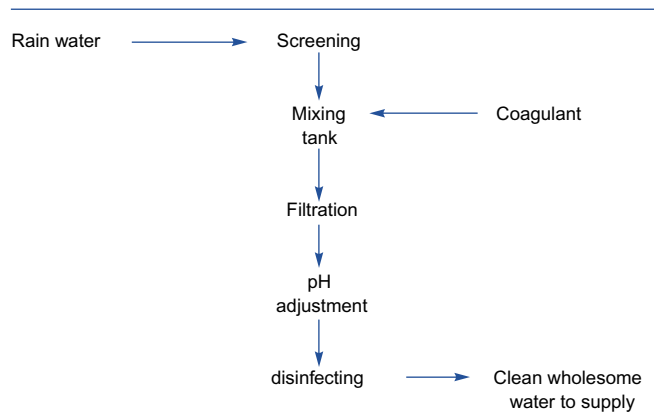
The water used by authorities is taken from surface water, lochs, streams and rivers, or from groundwater which is rainwater that has soaked through the soil and is stored underground. River water quality is generally much more variable than reservoir or loch water, as flows vary during the year and rivers are more susceptible to pollution. Groundwater is stored in naturally formed underground reservoirs called aquifers. Groundwater is normally very pure because it is filtered as it passes through rock to the aquifer. The water is brought to the surface by drilling a bore hole into the rock and inserting a pump at the bottom.

Water treatment

Water treatment involves physical and chemical processes that capture impurities so that the water is safe to drink. The chemical process is set out in Figure 11.3.

Treatment is a necessary part of the water supply service to ensure adequate and continuous supply of wholesome water under the terms of the Water (Scotland) Act 1980. The level of treatment required depends upon the quality of the incoming water. Clearly, therefore, more treatment is likely to be required for river water than for ground water. Raw water is made safe by a complicated process by which the raw water is filtered either under very great pressure or through a chemical process. After this process is complete, the acidity or alkalinity of the water is checked and if necessary is subjected to pH Adjustment. The water is then disinfected, usually with chlorine, to remove the bacteria capable of producing disease.

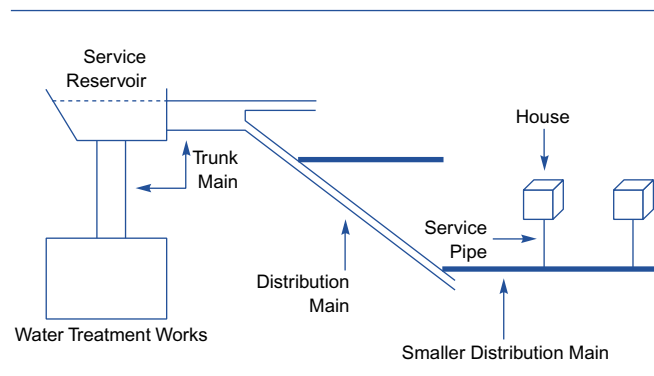
Figure 11.3: Chemical water treatment



Treated water distribution

Treated water is transported to customers in a distribution system. This distribution system is local (or, at best regional). This limits the supply / demand balance to the local level rather than the national level, which is what happens in the electricity and gas sectors. The distribution system is a network of pipes and pumps (the water mains) that deliver the water to those places where it is needed. Storage tanks are often used at treatment works or further downstream in the distribution system to balance the supply of water into the system and demand for the water from customers. The water in the distribution system will typically pass through mains of decreasing size as it nears the customer. At the boundary of the customer's property, the water will pass into service pipes, which are the responsibility of the individual customer. The distribution system is shown in Figure 11.4.

Figure 11.4: Distribution system



One of the problems facing the water industry is the loss of water in the distribution system through leaking pipes. Much of the water mains network is made from old, cast iron pipes which, compared with modern steel and plastic pipes, are much more prone to leaks and bursts. It is the responsibility of the water authority to track down and mend leaks, and to refurbish or replace worn out pipes.

Retail of treated water

This activity has been described in detail above. It involves all of the customer-facing activities such as billing, collection, customer service and the provision of information.

Collection of sewage

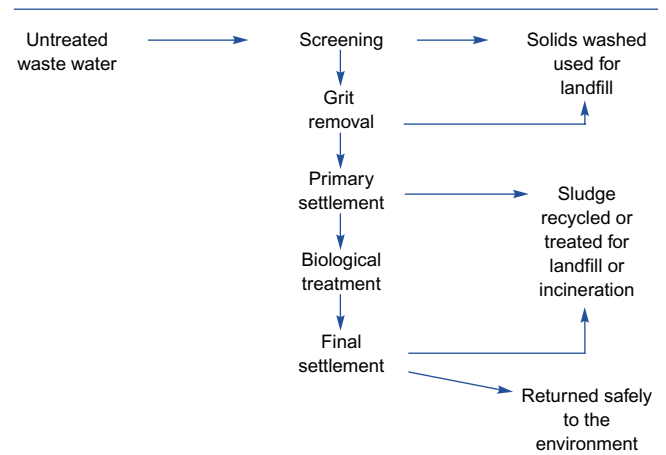
Sewage is the waste water from homes, offices, factories and other buildings together with rainwater from roads, footpaths and roofs. It is collected and taken for treatment through a network of drains and pipes, known as sewers. Most properties are connected to the public sewer, which belongs to and is the responsibility of the water authority. In a few cases, properties drain to a private septic tank or to a local water course. In these cases, the drainage of properties is the collective responsibility of the owners of those properties.

Sewers work by using gravity and pumps to carry the sewage to a waste water treatment works.

Waste water treatment

Waste water treatment works harness natural processes to remove the non-water from waste water and to clean the water so that it can be safely returned to a river, estuary or the sea. The waste water treatment process is set out in Figure 11.5.

Figure 11.5: Waste water treatment



Preliminary treatment involves passing the untreated waste water through a sieve-like device to remove large objects. Primary settlement involves removing fine solids. The waste water passes through primary settlement tanks, in which finer solids settle to the bottom of the tank forming a sludge that is collected for further treatment. Biological treatment is used to remove dissolved substances. The waste water from the primary settlement tanks is treated biologically as it passes through the filter bed. Final settlement removes any remaining fine solids. After final settlement the effluent is in most cases clean enough to be discharged.

Disposal of treated effluent

Treated effluent is the waste water after it has been treated; this is disposed of by discharge to a river, stream or the sea. The effluent discharge from treatment works will still contain some bacteria, but this is the case with all water found in the natural environment. The bacteria in the effluent from waste water treatment works are enormously diluted at the point of discharge. The discharge of treated effluent is regulated by law and is monitored and controlled by the Scottish Environment Protection Agency.

Disposal of sludge

Sludge is produced as a result of the two settlement stages in the treatment of waste water. Sludge can be sent to landfill or it can be used as a fertilizer for agriculture or forestry. Proposals to allow treated sludge to be used in the generation of electricity are also being examined.

ii) Key requirements for success in each functional activity

The functional activities break down into four broad areas:

- interaction with the environment (abstraction of water, discharge of treated effluent);
- production and treatment (treatment of raw water, treatment of sewage);
- networks (distribution of treated water and collection of sewage);
- retail (interaction with end customers).

Each of these four areas requires different skills and resources. There are also quite different risk profiles pertaining to each of them. Competition will develop where a new entrant can see that a reasonable return is available given the investment required.

Interaction with the environment

In Scotland there are only limited controls on abstraction of water. In England and Wales, abstractions are subject to licences. It is likely that with the introduction of the Water Framework Directive, abstraction of raw water in Scotland will become subject to a similar licensing regime (probably within two to three years) as currently exists in England and Wales. Abstraction rights are likely to have a high value where water is in short supply and less value in locations where raw water is plentiful.

According to Ian Byatt, former Director General of Ofwat, "Water is a natural monopoly combining considerable sunk costs in the infrastructure with high transportation costs. It is a rising cost industry, where cheap sources of supply are generally above average costs. There are geographical constraints on supply"⁶.

Table 11.2 produced by Ofwat compares the indicative add-on costs for water, gas and electricity for the UK.

Table 11.2: Indicative add-on transport costs⁷

	Electricity pence/kWh (400KV)	Gas pence/therm (24" pipe)	Water pence/m ³ (36" pipe)
Bulk cost (excluding transport)	3.0	20	30
Transport cost per 100km	0.15	0.5	15
Transport add-on per 100km	5%	2.5%	50%

Two other factors are likely to influence the value of a right to abstract. The first is the quality of source. It is obvious that if a source offers a better quality of raw water, which in turn requires less costly treatment, then this source will have a greater value than another source located in the same area. The second factor, and probably by far the more important, is the availability of a transportation and, possibly a treatment, infrastructure. Water is heavy and is difficult to move between source and treatment works. If there is a transportation infrastructure (with available capacity) located nearby, this source is likely to have a greater value. Similarly, if the water had to be treated, then it would be vital that the transportation infrastructure should take the water to a treatment works that is capable of treating the abstracted raw water. It would also be essential that this extra treated water is actually required by customers and that capacity in the distribution system existed.

The raw water distribution/transport infrastructure would appear to be a natural monopoly. It is probably not feasible to replicate these pipes and valves, and the influence of this natural monopoly and the constraint of the local onward distribution system are likely to hamper severely any attempt to establish in the market competition in the treatment function.

It is possible that the water source could have value to someone other than the owner of a water treatment works or a buyer of potable water. Perhaps, the most obvious example in Scotland is the whisky industry, which strives to guard its water sources. A less obvious example, which will very much influence the revenue of a water supplier, is where an industrial or commercial customer is able to use a raw water source to replace part or all of the potable supply. Clearly, in most cases, development of such a raw water source will be cheaper than the full cost of the potable alternative.

⁶ Byatt (1998).

⁷ Source Ofwat).

The disposal of treated effluent is controlled by legislation such as the Urban Waste Water Treatment Directive and the Control of Pollution Act. In order to dispose of liquid waste to the environment, it is necessary to obtain a 'discharge consent' from the Scottish Environment Protection Agency. This consent is required by both the operator of a sewage treatment works and by any organisation seeking to discharge untreated liquid waste to the environment. Discharge is often through a sea or estuary outfall - essentially a long pipe which takes the effluent clear of the coastline to a point where the rate of natural dispersal is high. Competitive opportunities may exist for the owners of consents and for the owners of outfalls.

Production and treatment

The production and treatment activity is similar to many other capital-intensive processes. Other examples would include refining crude oil or producing chemicals. The treatment plant must be capable of achieving the standards (as defined either by the customer or by regulation). Once this criterion is satisfied, the only real consideration is to minimise unit costs. Unit costs are minimised by effective procurement of efficient plant (with the minimum whole life cost at the expected throughput) and by managing throughput within cost-effective boundaries. Treating more volume may actually increase costs if greater manual intervention is required or the expected asset life is reduced. The treatment plant can only be built in a location where the distribution system is capable of taking the output and conveying that output to the point of final demand. The plant also has to have access to an appropriate supply of raw water for treatment.

The business drivers of sewage treatment are not materially different from raw water treatment. Sewage treatment is also a capital-intensive activity, where proper management and operation of the asset are critical. Again, minimising unit costs of output is the key to success.

The treatment and disposal of sludge could involve mainly operational expenditure (e.g. disposal to landfill) or quite a high degree of capital expenditure (e.g. the construction of a drying plant). The key drivers of business success are similar to those discussed for water treatment, i.e. compliance with standards is a pre-requisite and unit costs have to be minimised. There is one material difference, which is that the collection of sludge

from point of production does not depend upon a pipeline infrastructure, and there is therefore more potential latitude in where the plant is sited. This should improve the likelihood of competitive activity in this area. There is likely, however, to be only a limited number of sellers of sludge.

Networks

The networks of pipes that constitute the water distribution or sewage collection system are a natural monopoly, which it would not be feasible or economically viable to replicate. It is the distribution network, which adds most value to the treated water (see Table 11.2 above).

Infrastructure management is key to making best use of this asset. This involves managing the network to minimise costs to the customer over the long run. To minimise costs the operation of the network must be well understood and any response to issues relating to the performance or condition of the network must be efficient. In some cases this may be pro-active replacement or maintenance, in others a reactive approach may be best.

As a natural monopoly, it is possible for an organisation that is not the owner of the network to seek access to transport treated water to its customers. This is called common carriage, and it is discussed in greater detail later.

It is critical for costs to be minimised because the Competition Authorities or a Court may be likely to consider an access charge that contained a large element of demonstrable inefficiency or misallocated costs to be an abuse of a dominant position and hence a breach of the Competition Act.

Retail

As already explained, retail skills are very different from the other functional areas of the value chain. This is largely because of the much greater heterogeneity in the customer base. Retail is also quite different when the service is being provided in competition with others on a day-to-day basis, as opposed to being a service to customers implemented monopolistically during a contract won by competitive tender. Management of the customer base is not easy and while the investment is relatively low, there is a large degree of risk. As we will see in Chapter 12, Independent

Energy went into liquidation because of its failure to bill its customers successfully.

iii) Likelihood of competition in the market

The Porter model states that there are five basic competitive forces in any industry. The five forces are as follows:

- **Threat of entry** – Porter gives a number of examples of barriers to entry, such as economies of scale, capital requirements and product differentiation.
- **Intensity of rivalry among existing competitors** – depending on factors such as the number or relative market share of competitors (i.e. does one player enjoy de facto dominance because of his scale).
- **Pressure from substitute products.**
- **Bargaining power of buyers.**
- **Bargaining power of suppliers.**

I have used this framework to analyse the likelihood of competition 'in the market'.

The largest return on capital will be received from a sustainable monopoly that has a fragmented customer base and many suppliers, and which provides a service or product to which there are no substitutes. Competition is unlikely where there are significant barriers to entry. Barriers to entry may be the high cost of entry (in capital or in acquiring market share) or a function of the structure, capacity or regulation of the market. Examples of the latter would be the lack of availability of new landing slots at Heathrow Airport (capacity) or the inability of a European Airline to pick up new passengers in, say, New York en route to Los Angeles (regulation).

The availability of substitutes plays an important role in limiting the price that the market will bear. For example, air travel between London and Scotland was more expensive before alternative routes and carriers entered the market. Easy Jet, Go or Ryan-Air are now potential substitutes to the British Airways Shuttle or British Midland service and this has a limiting effect on the prices charged by creating both choice and extra capacity. The more substitutes that are available, the lower the market price. More substitutes will on balance tend to make a market less attractive to a new entrant.

The relative influence of both buyer and seller is also a key factor in determining the attractiveness of a market. There are situations where a seller can be in a very weak position (e.g. the sale of assets in a bankruptcy situation). The converse can also be true, where the product being offered plays an essential role in the activity of the buyer (water can be vital for production of goods, as well as having an irreplaceable role for domestic purposes) and cannot easily be done without. In situations where the buyer has relatively little influence on the seller, then entry into the market is more likely.

The number of suppliers in a market will also influence the attractiveness of that market to a new entrant. For example, sources of crude oil are limited and this will impact significantly on decisions to enter the oil transportation or refining businesses. Both businesses would require a significant capital outlay and the new entrant would have to be certain of access to a supply of crude oil if the investment were to be justified. In contrast, tobacco is sold at auction and there are very many small suppliers. As a result, there is a ready and easily accessible supply market for any organisation that is considering investing in cigarette manufacture.

The final factor influencing the attractiveness of a market is the amount of existing competition and the extent of regulatory or other controls that may limit market liquidity. The lower the influence of regulation and the smaller the number of competitors, the more attractive the market will be and hence the greater the likelihood that a new entrant will seek to enter.

I will now examine each of the four basic activities according to these five criteria and suggest the likely development of competition in the market in each of these functional areas.

Interaction with the environment

There are limited sources of raw water and the Water Framework Directive is likely to make their exploitation more costly. Similarly, continuing tightening of environmental standards is likely to limit opportunities for the discharge of treated or partially treated effluents. Entry into the market is therefore going to become increasingly difficult. This is the rationale behind the proposed trade in abstraction licences in England and Wales. It does not seem fair from the customer perspective, that extra cost is incurred because an abstraction

licence is not required by one supplier but is not made available to a competitor. There may also, however, be other significant costs associated with entry to this market - either in constructing an outfall or in developing infrastructure to make use of a raw water source. This barrier may not be so significant from the viewpoint of a major industrial user of water. Liquidity in any market is, however, likely to be limited.

This is because there are no substitutes available. Water has to be taken from the natural environment and ultimately has to be returned after use. There are no viable alternatives either in sourcing or in the removal of waste.

The influence of the purchaser of raw water is limited by availability of the source. In Scotland, the relative abundance of raw water sources will mean that buyers may be able to exert some influence, whereas in the South East of England, the limited number of sources would significantly limit the influence of buyers. This influence is further limited, throughout the UK, however, by the availability of infrastructure to exploit the resource and by regulatory restrictions. The cost of transporting water and the regional nature of infrastructures will also limit the influence of the buyer and the seller.

The barriers to disposal of treated effluent are primarily regulatory but there is also an infrastructure/capital barrier. In this sense it is very similar to water abstraction. Again, as with water abstraction, there are no meaningful substitutes available.

Theoretically, the buyer of effluents for disposal may have significant influence over the supplier. This is because of the constraints of regulatory controls and limited infrastructure. The extent of the buyer's influence would depend on the degree of control over discharge consents and on the state of the local infrastructure. The Competition Act would likely limit this influence under the provisions concerning an abuse of dominant position. The buyer would have to offer a fair price for the service provided.

Competition in abstraction rights or discharge is only likely to develop in parallel with competition in the production and treatment function. This is because the usefulness of these rights is limited by demand for services. If competition develops in the treatment of water and/or effluent, then there is

likely to be increased competition for the scarce resources discussed above. Otherwise there would seem to be little, at least in the Scottish context, that would stimulate any degree of significant competition.

If retailers saw potential competitive advantage in capturing more value from the production and abstraction processes, then competition may develop through 'common carriage'. It would, however, involve major diversification for a pure retailer and, as such, that would be a commercial risk. It would seem likely that they would seek a specialist partner if this were really to present an interesting business opportunity.

Production and treatment

If supply and demand for treated water are in balance, there is little reason to expect a new entrant to be attracted to offer his services. The regional balancing of supply and demand will also limit the attractions of adding significant production capacity. The only reason to expect entry would be if the new entrant felt that he could provide the product at a lower unit cost. This may result from either greater operational or capital efficiency or from design/ technology efficiencies. The payback in a normal efficient market on any production investment is, however, likely to be quite extended.

In a limited number of cases, opportunities may be presented to a new entrant either because there is an excess of supply or of demand. If existing supply is too great, there may well be an opportunity to build a lower unit cost solution. If there is excess demand, the new entrant may be in a better position to exploit this opportunity than the incumbent.

The influence of buyers is limited. Even if there were only one buyer because there is no competition at retail, Competition law would appear to prevent the single retailer favouring its own producer at the expense of a new entrant, if the latter were offering a lower price. In general terms, the dynamics of effluent treatment are the same as for the treatment of raw water.

There are limits to the development of competition in water treatment, which arise from the access to raw water (at the site for treatment) and access to a market. This issue is not addressed directly by abstraction licences.

Real liquidity in the market is limited by externalities and it may be impossible sufficiently to ring fence the natural monopoly to have real competition.

There are a few cases where competition could be presented to an incumbent producer of treated water or effluent. The large user of water or discharger of effluents may represent an opportunity to a new entrant. This could involve the construction of an on-site effluent treatment facility or an infrastructure to supply raw water or to recycle water. In some instances these investments may be economically justified, in which case they should progress. In other cases the perceived benefit results from an incorrect allocation of costs and hence the establishment of an uneconomic price. In the latter case, it would be better for customers in general, if the incumbent were to review its costs and pricing in order to retain the customer.

The treatment of sludge shares many of the business drivers of water treatment described above. Only a technological innovation is likely to stimulate new entry into this market, if demand is being satisfied, the service is being provided efficiently and a 'normal' return is being earned.

Networks

If this natural monopoly is efficiently managed, a fair return will be available on a consistent basis. Excess returns are limited by regulation and by the provisions of the Competition Act. The water and sewerage network is an essential facility and, therefore, there is a requirement on the owner to make excess capacity available at a fair price.

Retail of treated water

As discussed above this is a quite different activity to the other processes involved in the supply of water and sewerage services to customers. There are barriers to entry although these may be more apparent than real. The barriers surround knowledge about customers, information and billing systems, and the intellectual property required to deal effectively with customers.

At the current time the Scottish water authorities have a contract with the local unitary authorities to bill domestic customers for their water and sewerage services. If the potential entrant were already involved in the supply of services to customers in

Scotland, it may be relatively straightforward to begin to offer these customers an additional service - water. This new entrant may well already have the information systems, knowledge of the customer base and reputation to be a credible choice for customers. Even in the non-domestic arena, where the water authorities already bill customers, alternative offerings may be attractive to customers on either convenience or price grounds. Similarly, potential entrants who already have a relationship with the customer through supplying a different service and who have the knowledge management systems to deal effectively with customers are likely to enjoy some success.

Table 11.3 summarises the discussion above.

g) Likely types of competition in the market

There are two broad types of in the market competition that are likely to develop: brokerage/retail and common carriage.

i) Brokerage/retail

A brokered deal arises when the customer deals with a retailer, who is not responsible for anything other than the final supply to the customer's premises. The broker would typically handle issues such as billing and all aspects of customer service. Many issues, such as supply interruptions would be dealt with by the broker who would deal with the third party network operator or generator. Brokerage will work where economies of scale or scope exist within the customer interface area of the value chain.

Scale economies result if the marginal cost to the new entrant in providing the service is very low because of unused capacity in its customer services/billing infrastructure. Scope economies could arise when the broker is already billing the customer for one or more other products. For example, if a household customer is already buying a telephone, electricity and gas service from Scottish Gas, it is very likely that the marginal costs to Scottish Gas of offering a retail water service would be much lower than those of the water authority. An opportunity for brokerage could also result from significant relative inefficiency in the delivery of the retail service to the customer. In the non-domestic sector at present, the most common rationale for a brokerage arrangement is to take advantage of imbalances between fixed and variable elements of tariffs or inefficient water use by the customer.

Table 11.3: Likelihood of competition across the functional value chain

	Ease of Entry	Substitutes	Buyer power	Supplier power	Current competitive dynamic	Likelihood of competition 'In the Market'
Water abstraction	Low	None	Low	N/A	Low	Low (except under common carriage)
Water treatment	Medium	Domestic - None Non-domestic - Yes	Domestic - Low Non-domestic - Medium	High	Low	Medium for non-domestic customers. Otherwise, low (except common carriage)
Treated water distribution	Very low	None	Low	High (Competition Act)	Low	None. Essential facility rules will apply
Retail of treated water	Very high	None	High	None	Low	Likely to be significant
Waste water collection	Very low	None	Low	High	Low	None. Essential facility rules will apply
Waste water treatment	Medium	Domestic - None Non-domestic - Yes	Domestic - Low Non-domestic - Medium	High	Low	Medium for non-domestic customers. Otherwise, Low (except common carriage)
Disposal of treated effluent	Medium	Domestic - None Non-domestic - Yes	Domestic - Low Non-domestic - Medium	High	Low	See waste water above
Disposal of sludge	Medium	Domestic - None Non-domestic - Yes	Domestic - Low Non-domestic - Medium	High	Low	See waste water above

Brokerage proposals were possible prior to implementation of the Competition Act. There are relatively few examples of brokerage arrangements, but their impact has in some cases been quite significant. In most cases these arrangements have started because of the method of setting tariffs rather than as a result of any concerted attempt to benefit from potential economies of scale and scope.

It is likely that the uncertain prospects for prices have significantly slowed the introduction of brokerage deals for customers. The potential providers of these services would not want to tarnish their hard won reputations with the sort of price rises that have characterised the water industry in recent years. Inevitably, however, as we move to a more financially

sustainable industry, there will be a greater likelihood of customers being offered services by an alternative provider. This opportunity is not a function of the Competition Act, 1998 - it could and probably will happen, irrespective of the approach of policy-makers to the Act.

ii) Common carriage

This is the one new opportunity for competition that is made possible by the Competition Act, 1998. The 1998 Act contains two provisions: Chapter 1, which relates to price fixing; and Chapter 2, which covers the abuse of a dominant position in the market. It is Chapter 2, the abuse of a dominant position, which is relevant in this context.

The Act introduces into UK law the concept of an 'essential facility'. An essential facility is defined as an asset that it is not economically viable to replicate. A new entrant to a market must be provided with an opportunity to use this essential facility if there is capacity available and if a fair charge is paid. From the perspective of an incumbent, it is particularly important that the fee for use of the asset is set at a level which can be justified and which reflects the full costs of use. The new entrant would have a right of appeal to the Office of Fair Trading in the event that the charge for access were too high. If the price for access were lower than the full costs of operation, the new entrant is likely to accept the price without comment.

The essential facilities in the water industry certainly include the underground infrastructure - the miles of pipes that convey water from the treatment works to homes and businesses and effluent from homes to sewage treatment works. It is also quite likely that certain water and sewage treatment works will be regarded as 'essential' because replicating these may not be either economically or practically possible. This would include, for example, works that serve densely populated areas.

Common carriage provides the opportunity for more of the value created in the provision of water and sewerage services to be captured by the new entrant. The new entrant, as discussed above, is already able to offer a brokered service to customers. Common carriage will enable the new entrant to abstract and treat water and arrange for this to be entered into the distribution system. If the new entrant is able to abstract and treat this water at lower cost than the incumbent, this will result in either the new entrant being able to reduce its retail prices (and, therefore, the attractiveness of what it is offering to customers) or increase its profitability. The incumbent will be left with higher unit costs for treatment and will therefore face a choice of increasing its prices (if possible within the regulatory price cap) or accepting lower profitability.

The attractiveness of common carriage depends upon liquidity in the market for water abstraction and treatment and sewage treatment and disposal.

While tradable abstraction licences would ensure easier access to resources, this does not necessarily facilitate in the market competition in water treatment. There are significant barriers arising from having to ensure access to resources at the point

of treatment. On the water side, this is likely to reduce competitive options significantly and, quite possibly, the attractiveness of common carriage.

On the sewerage side, there may be more options to site new plant next to sites where discharge consents are likely to be available. Common carriage through the collection network may, therefore, have attractions. However, the technical and capital requirement barriers to entry should not be underestimated in any assessment of the development of common carriage.

The dynamic of common carriage could well be changed quite fundamentally if the incumbent is either inefficient or has inaccurately allocated costs to network activities. In either of these cases, value would be captured opportunistically and common carriage could be attractive.

h) Revenue vulnerability from in the market competition

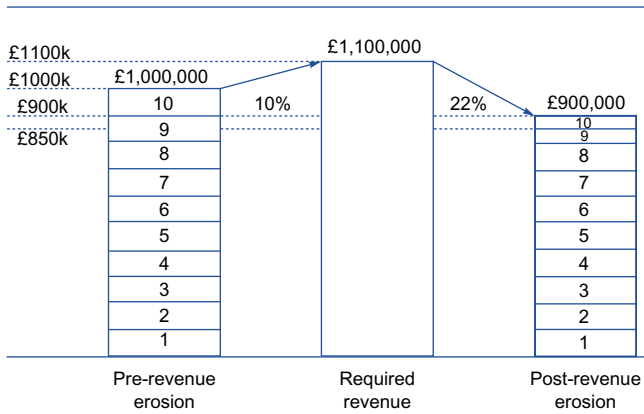
i) Impact of in the market competition on the incumbent supplier

The impact of "in the market" competition on the incumbent supplier will largely depend upon the extent to which brokerage, common carriage and off-network solutions develop. Each of these will result in a loss of revenue to a greater or lesser extent. The regulatory cap on revenue is therefore likely to be exceeded by the increase in prices required by the regulated incumbent in order to raise the revenue agreed.

The following simple example demonstrates. Let us assume that there is a water only business which has ten customers, each of whom pay £100,000 a year in volume based water charges. The total revenue of this small water business is £1,000,000 a year. If the agreed regulatory revenue cap is 10%, the water business is allowed to raise £1,100,000 in year two. If two customers decide that they want to opt for an off-network solution, which will satisfy half their requirements, then there is a decline in the chargeable base of $(2 \times £100,000 \times 50\%) = £100,000$. The chargeable base therefore becomes £1,000,000 minus £100,000 or £900,000. If the incumbent still needs to raise the full £1,100,000 in order to deliver the

standards of service required, then the price (tariff) increase on all remaining customers is (£1,100,000/£900,000) or 22.2%, rather than the 10% implied by the revenue cap.

Figure 11.6: Example of revenue erosion and impact on remaining customers

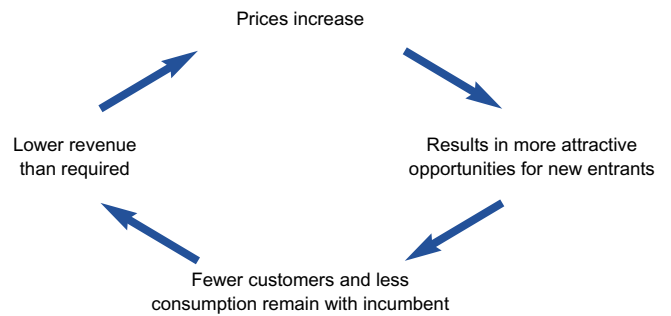


The impact on revenue can be made worse according to the elasticities of demand, supply and substitution. The price elasticity of demand depends upon the variability in the absolute quantity demanded at any particular price. If the quantity declines less quickly with an increase in price, total revenue will increase. If quantity declines more quickly, then revenue will decline. In most cases - given the current lack of competition, the incumbent will find a relatively inelastic demand curve, i.e. one where the impact of a price rise on the quantity demanded will be relatively modest - at least in the short run. It is important to note that the quantity demanded equals the number of customers multiplied by the average total volume of water consumed. That is to say the quantity demanded will depend both on the number of customers and on the consumption of each customer. It is therefore possible that revenue could fall, even if the total number of customers remains the same. This would be because the average volume consumed by them falls. The demand curve can be made more inelastic by increasing the fixed element of the charge.

The higher price may have secondary (long run) effects. If the higher price were to attract a new entrant into the market whether on a common carriage, brokerage or off-network solution basis, then the customer may find that some or all of his demand can be met at a lower price. The result would be to increase the price elasticity of demand. Greater tariff increases would then be required to reach the required level of

revenue. This results in a cycle of doom: higher prices, which lead to growth in the number of alternative supplies, which leads to lower total demand and lower than required revenue and consequently a need for higher prices.

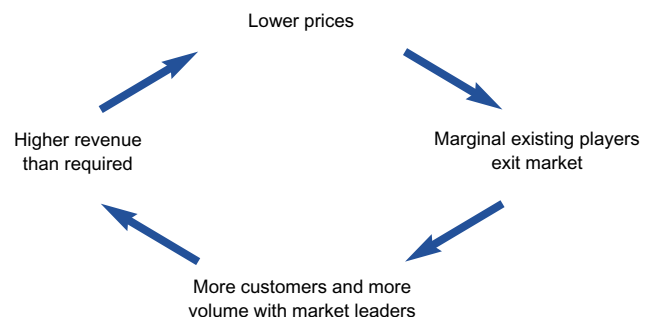
Figure 11.7: Higher prices



In a competitive or, at least, a non-monopolistic market, this cycle can work in reverse. If, for example, efficiency or innovation were to allow an incumbent to reduce prices, then a positive chain reaction can be set in motion. Lower prices can lead to less attractive competitive options, which leads to higher demand and consequently higher than expected revenue and hence the opportunity to cut prices further.

It is important to understand that a vertically integrated operation comprises of a number of separate and essentially discrete activities. In many industries vertical integration was the norm, but greater specialisation, limits on available capital and improved technology have resulted in a reduction in the extent of vertical integration. Some types of competition may impact on the whole value chain, while others will be relatively restricted in their impact (e.g. impacting only on customer interface activities).

Figure 11.8: Lower prices



ii) Brokerage

Brokerage will only impact on the revenue which accrues to the supply or retail business. Its impact on the whole vertically integrated business of the water authority will be relatively limited. This will equal the total costs incurred plus the margin that is determined by the competitive marketplace. The margin may be negative if the costs incurred are higher than those that can be achieved by an efficient supplier. Total costs are the sum of the variable costs associated with each customer (for example, the costs of producing an extra bill) and the fixed costs of being in the water supply business (office space, information and billing systems etc.).

The high ratio of essentially fixed costs will result in unit costs per customer falling sharply as their numbers increase. It will also mean that there are certain critical thresholds, at which it is attractive to be in or out of the supply business. Loss of a customer - especially a major customer - is likely to have a major impact on the retail/supply business. However, loss of even a major retail customer (assuming that they are still supplied by the vertically integrated suppliers' network) will have only a marginal effect on that vertically integrated supplier's business. The actual economic impact of the loss of a major customer at retail is discussed in Chapter 13.

iii) Common carriage

Common carriage activities would potentially pose a larger threat to revenue than brokerage (to the extent that water treatment or sewage collection costs could be avoided). As the distribution (pipes) business is a natural monopoly, if it is efficiently run, the price of use will equal the cost of use plus the return required to invest properly in maintaining the serviceability of the network. Common carriage should therefore impact only on the revenues associated with the abstraction and treatment business and the retail/supply business. It could have a more material impact on the vertically integrated authority. The impact of common carriage on the incumbent can be reduced if the incumbent strives to achieve the minimum sustainable unit cost of treatment and abstraction.

i) Off-network competition**i) Definition of off-network competition**

An off-network solution for a customer is one where the

customer is able to reduce his dependence on the public water and sewerage system. This may be partial or it could be more significant.

The vast bulk of water distributed to large user, non-domestic customers is used for non-potable purposes. For example, the water may be used for cooling, for conveying goods (e.g. fish processing, cement production) or for cleaning. In these circumstances, potable water may not be required, indeed it may not even be the ideal solution to the user's needs. There are some industries that have to clean the water further and remove the chemicals that have been added to water to ensure that it is safe to drink, for other industries sea water would actually be preferable to potable water.

Faced with increasing bills, some customers will inevitably seek ways to reduce their bill. At present there are two ways in which a bill could be reduced: firstly to use less water from the public system; or secondly to consider abstraction from rivers or canals, abstraction from the sea (in the case of fish processors), recycling of water and/or the use of a borehole. Each of the latter solutions are likely to have potentially significant capital costs and/or implications for the potential discharge to sewer and therefore on the trade effluent bill.

The situation is similar for effluent treatment. There are opportunities to treat effluent on an industrial site prior to discharge to the public sewer or through an outfall with an appropriate consent. Such pre-treatment may avoid a significant proportion of the effluent charges that would be levied by the water authority or, if a consent were available, potentially all charges would be avoided.

There are several examples where this type of pre-treatment has been introduced. It has been estimated that £100 million has been spent over the past five years by the chemical industry alone⁸ in seeking solutions that would lower effluent treatment costs.

These off-network solutions are the most common existing form of competition. They are currently more common on the effluent side, but are beginning to be introduced on the clean water side as well. In reality, these have been available for many years and the recent acceleration in this type of arrangement

⁸ Source: Chemical Industries Association Large User Forum – 27 November 2000.

again has nothing to do with the Competition Act. It has far more to do with the increasing costs of water and increased restrictions on discharges to the environment.

ii) Key success factors

There are only a very few customers who would prefer to be off-network. In meetings with large customers a clear message has come across that cost has been a major factor in promoting off-network solutions.

A market for off-network solutions will only develop if the costs - to the customer - of these solutions are lower than the prices charged by the public supplier. At the current time, one of the easiest ways in which a water bill can be reduced is to reduce consumption of the product. The large proportion of any bill that is charged by volume makes these savings possible. There has been a consequent increase in consultants who specialise in water management, offering their services to industrial and commercial customers.

Some larger customers are located near to a water source or may have access to a discharge consent for effluent. In these circumstances, the customer may be able to reduce their bill to the water authority by capitalising on their location. In order to be a realistic option the whole life costs, when annualised, would have to be lower than the price, which the organisation would have paid for the services that are replaced.

iii) Likelihood of development

At the current time, this off-network competition represents a quite significant threat to the revenues of the Scottish water authorities. There are four principal reasons for this:

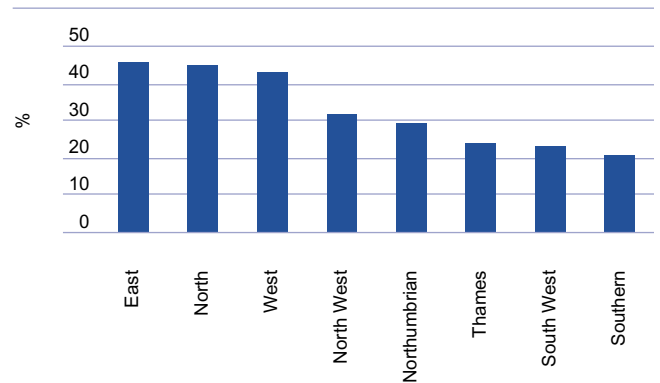
- the greater revenues paid by the non-domestic sector in Scotland,
- the method of charging,
- lack of understanding of the incidence of costs,
- lack of service to customers.

I will discuss each of these in turn.

Non-domestic share of revenue

The non-domestic sector pays a greater share of total industry revenues than in England and Wales. This is illustrated in Figure 11.9.

Figure 11.9: Non-domestic percentage of total revenue 2000-01⁹



There is little reason to believe that there should be as marked a difference between Scotland and the rest of the UK. This does not, however, necessarily mean that the balance in Scotland needs to swing as far as in England. While Scotland does have a relatively high share of process industry (chemicals, paper, electronics), such industry does tend to be less concentrated (and therefore more expensive to supply) than in other parts of the UK. It is also possible that in England the threat of an inset appointment has reduced prices to the larger non-domestic customers. The large volumetric component of customer charges in England and Wales is also likely to reduce the size of bills for the non-domestic sector where alternatives to potable water are available. There are also some issues about the relative prices to some small businesses in Scotland, who appear to benefit from the current tariff regime.

Unfortunately, at this stage, there is insufficient data to be able to assess the fully-loaded costs of supply for major industrial customers. There is, therefore, some considerable work still required before a broadly cost-reflective price for the service provided can be offered. It may be that Scottish Water or the existing three authorities may be able to present clear evidence that their costs of supply would justify increasing domestic charges relative to non-domestic tariffs. Until there is clear evidence, I would propose that no such adjustment be made.

As companies seek to control costs, they will inevitably look at costs that are increasing and at costs which, when benchmarked against the costs incurred at other sites, look to be excessive. This will mean that water charges are likely to be more visible as an issue in Scotland than in other regions of the

⁹ Source: Companies' Ofwat Tariff Structure 1999-00, Authorities' Charges Schemes 2000-01

UK. The level of charges in Scotland is, of course, more visible because of the relative inefficiency of the local supplier.

Method of charging

The current method of charging for water and sewerage would also appear to be contributing to the development of off-network competition. The most simple example is where a reduction in water use can lead to a significant fall in the bill to the customer. If this is not mirrored by a fall in the costs of supply, then the difference will have to be met by other customers. This would be a serious issue if the costs of supply were to exceed the total price charged to the customer.

There are basically three discrete services that are provided to the customer. These are:

- access to the public network,
- treated water,
- customer service and billing.

Value is created by the connection of a property to the water supply. The most obvious example is that land for development that is already connected to the water mains will sell for more than identical land, which is not connected. The extent of the use of that pipe is a secondary factor. It is believed that a pipe that is in use on a regular basis may actually outlast a pipe that is rarely, if ever, used. The connection therefore has value in its own right. This is the rationale behind the cost component relating to access to the public network. The same would apply to a connection to the public sewer.

Raw water may well fall from the sky, but that does not mean that it is free. There are environmental costs associated with the abstraction of water, although at the current time these have not been established in monetary terms. The treatment of water and the transport of that water through the pipe to the customer can be expensive. There are the capital costs associated with the treatment plant and the connection to the raw water source; and there are the operating costs associated with manpower, chemicals and energy used to treat the water, make it safe and pump it along the pipeline to the customer. Some of these costs are fixed (the capital costs and the manpower), others are more variable (the energy and the chemicals). It would be

proper that customers' bills reflect these variable components. However capacity reserved for an occasional user should incur a fixed charge.

The same economics seems to apply to the provision of sewage treatment facilities. The largest element of cost is the capital and manpower, then there are the power and sludge disposal costs, which will tend to be variable. If the tariff has too large a variable component then customers who are unable to limit volumes will be unfairly penalised and will have to contribute more than their fair share. An example would be a customer who uses an increased amount of water for medical reasons but does not require any different supply infrastructure.

The customer service charge reflects the billing costs, the customer service (call centre, key account manager, publications) and, if appropriate, the meter operation and reading costs. These costs will be relatively fixed in nature and will not vary a great deal according to the use of water by the customer. They will obviously be higher in absolute terms for a large customer who merits a more personalised service, but in proportion to that customer's total bill, they will be small.

The current balance between the fixed component of the charge to a customer and the volumetric component do not appear to reflect the economics of the service that is provided. The current fixed charge tends to be from 0.08% to 18.0% of the typical large customer's bill. It has been estimated that the monopoly fixed costs are at least 66% of the costs of supply. This does not include the fixed cost component of water and sewerage treatment capacity. If the latter is included, this fixed element is likely to exceed 85%.

Incidence of costs

Limited understanding of the incidence of costs can result in off-network solutions that are not economically sensible being developed by customers, and not being responded to by incumbent supplier. One clear example of this occurred in 2000, when fish processors in Aberdeen were close to opting out of the public sewerage system and building their own effluent treatment plant. Whilst the effluent treatment plant would have reduced their costs by a not insignificant margin, these costs were materially higher than those incurred by the

incumbent water authority. It was therefore possible to structure a deal that was beneficial to the incumbent water authority, the fish processors and to all other customers of that authority.

I believe that a proper understanding of costs is absolutely critical to the management of the water industry in Scotland. This will not only facilitate their drive for efficiency, but will also ensure that the threat posed by competition is only real where genuine economic value is being created.

The key factor in understanding when there is an economically rational case to pursue an off-network solution is to understand the costs that will be incurred in the solution and the costs of supply of the incumbent. In particular, the customer must understand all the costs that are being incurred, including those (for example, senior management time), which it may be difficult to assess in monetary terms.

In addition to the capital costs, the customer ought to make an assessment of the potential environmental constraints, which may limit the pay-back period on the capital investment. There also ought to be a proper costing of the risks associated with security of supply in the longer term and exposure to environmental regulation risks.

If the supplier is to understand the risk of competition, he must understand the real costs of supply to all major customers and ensure that the prices offered to these customers do reflect the true costs of supply. Perhaps most importantly, the supplier should understand why a customer should want to seek an off-network solution.

Lack of customer service

I will discuss the issue of customer service in more detail in Chapter 22. At this time, it is useful only to note that key account management is at a very early stage of development in the water industry in Scotland. Only East of Scotland Water Authority has made a significant investment in relationship management with customers and this is quite recent. This has limited the understanding of the authorities' managers of the issues, which concern customers. In addition, the authorities' poor performance in billing will also have reduced the confidence of the customer in their supplier and, given the lack of competitive

choice, some customers, almost inevitably, may have felt forced into a situation where they pursue an 'off-network' solution.

iv) Likelihood of off-network solutions - summary

There are significant economies of scale in the construction and operation of sewage treatment works. It should, therefore, not be possible for an industrial site to develop and operate its own works more efficiently than the specialist service provider. The economic incentive therefore has been created by the tariff regime and potentially by significant inefficiency. The tariff must have been set at a level so significantly in excess of true economic costs that the relative inefficiency of small scale (and a higher cost of capital for a private sector, non-specialist operator) has been overcome. This incentive should be removed in order that the public system is used to its full safe and sustainable capacity so that overall unit costs are minimised. The only exception to the incentive being a result of tariffs and / or inefficiency may be when there is a real capacity or development constraint. Even in this circumstance, however, there is likely to be a better solution both for customer and service provider if they work together to find it.

Abstraction from rivers or boreholes may represent a cheaper source of water than the potable public supply. However, if the full costs are taken into account (and especially the regulatory risks), these solutions will, almost certainly, appear less attractive. It is likely to be in the general customer interest if the supplier and customer work together to find a viable solution. It is, therefore, vital that the public service provider does not feel constrained in dealing with the customer, because this would be an open invitation to a competitor to 'cherry-pick'. This is not an invitation to strike any deal - but to strike a deal that is in the best interests of all customers. It is not clear how, from a broader customer perspective, off-network activity could be beneficial.

The only area where off network solutions are likely to be at all attractive is where a customer does not need potable water. Although the attractions in such cases will look a lot more modest after a full assessment of the costs and risks has been made, there may still be an advantage in pursuing the opportunity. In these cases, it will be important to look at the pricing and cost of a supplier of last resort service.

v) Supplier of last resort

For those customers who require a guaranteed supply of water and can at best tolerate only a short interruption to supply, this supplier of last resort service will still be required - even if the bulk of their needs can be met through an "off-network" solution.

It is possible for a non-domestic customer to decide that they are prepared to opt out of the public water and waste water system. This could happen, for example, if a producer has access to a long sea outfall and there is not believed to be any real likelihood that the necessary consent to discharge could be withdrawn.

In most cases a non-domestic customer who is an essential user of water is likely to want to be certain that they could reconnect to the public system if required. In some industries water is essential to safety or to continuing production. In these cases, there may be overwhelming economic reasons or regulatory reasons why a connection to the public system would have to be maintained. If a continuous process has to be shut down, even for a short time, the costs in lost production and management time can be very significant and could easily dwarf the annual water charge.

Customers for a supplier of last resort service will divide into two main groups:

- customers who want a service on demand from the water authority;
- customers who want to be able to reconnect within a reasonable timeframe, but for whom an on demand service is not essential.

Customers who require an on demand service will retain a close relationship with the water services provider, even if they go off-network for all their day-to-day use. If an on demand service is to be provided, the authority would have to maintain the supply (or collection, in the case of sewerage) infrastructure in a condition that would allow this service to be provided, if and when required.

The customer would not use any water (or discharge effluent) in normal circumstances. If, therefore, the supplier of last resort service could be provided on demand by reconfiguring

supplies, there may be minimal, if any, charges for the treated water. However, if a customer needs capacity to be maintained "just in case", then there would be a cost, which should be borne by that customer.

There would also be a customer service component to the maintenance of an on demand supplier of last resort service. There would certainly be administrative costs that would be unique to this sort of relationship, and there would still be billing costs and costs associated with ensuring that contact is possible.

The charge for the on demand supplier of last resort service would contain access, treated water and customer service elements. It would seem likely that this service may prove to be quite expensive for a customer. This would be especially true, if unused capacity has to be reserved just in case it is required. There may be some circumstances where network management may reduce the amount of infrastructure that has to be reserved, and this would clearly reduce the costs to the supplier and hence price to the customer. It will be a matter for discussion between customer and supplier, but the lack of a national grid, unlike in electricity and gas, certainly limits the options for network management - at least in the "on demand" scenario.

The second circumstance would arise where a customer could survive for a period of days or even weeks without a water service. This may be because water is not critical to their process or because the costs of shut-down are limited. A supplier of last resort service may not, in this case, require infrastructure to be reserved just in case the customer should decide to call upon the service. With time there will be other solutions that can be offered to the customer. The supplier and customer will have to agree the exact terms of the service to be offered and the costs would be calculated to reflect the level of service. It would obviously be cheaper than the on demand service.

vi) Impact on revenue

Off-network solutions will have the greatest impact on the revenue of the vertically integrated water authority from any single customer. It is possible that such solutions could lead to the loss of all revenue associated with the provision of that service. Total loss of any customer's revenue would result if no supplier of last resort service were provided.

If a company chooses an off network supply for its water needs (and rejects the supplier of last resort service), this could result in loss of revenue for the retail/supply business, the distribution (pipes) business and the treatment and abstraction business. This would have the effect of increasing unit costs and reducing profitability across all activities of the water authority. The consequent impact on the authority in this instance is much more severe than would be the impact on the supply/retail business of a similar customer switching retail suppliers.

The key success factor for the supplier is a proper understanding of costs and of the services being provided to the customer. This will allow properly informed discussion between supplier and customer and will result in a fairer price for the service being provided.

j) Potential implications for the Scottish water industry

The Scottish water authorities are relatively inefficient. There is no evidence to suggest this inefficiency is limited to particular areas of the vertically integrated functional value chain or that asset management is significantly better than operations. This would suggest that each of the broad activities outlined above i.e. production, distribution and retail, will be relatively high in cost in comparison to competitors.

Retail is, however, likely to be worst affected. There are two reasons for this:

- Firstly, the one area where the performance of the Scottish water authorities is notably worse than other potential competitors is in the area of collection of revenue from customers (particularly from the domestic sector). This is a cost that would exclusively apply to the retail business.
- Second, many of the potential competitors in the retail arena are likely to be able to benefit from economies of scale and scope, which is likely to mean that their unit costs per customer are lower than those of the Scottish water authorities.

The likely consequence of these factors is that competition for retail customers is likely at some point in the future to be intense. Ironically, the uncertainties around the pricing implications for the industry over the long term will have, to date,

restricted this competition. This uncertainty represents a window of opportunity and it would be vital that the Board of the proposed Scottish Water seize this in order to ensure that the broader customer interest is safeguarded. The only option that would appear closed is that of the Scottish industry handling its own domestic billing and collection. It is highly unlikely that the required investment could be recouped, or indeed that customer service would reach the levels achieved by other options.

The distribution business is a natural monopoly, which, as such, will always require some degree of regulation. The key success factor will be that management are able to set and justify a fair economic price for use of the network. This will no doubt have to take into account the costs of other network operators. If the incumbent operator is efficient and has allocated his costs accurately, no issues will arise. If, on the other hand, the operator is inefficient or has misallocated costs this would result in the price of access being set at a level below the actual cost plus the necessary return that is required by the incumbent to maintain the network in a serviceable condition. In other words, the incumbent can only continue to provide an adequate service if it finds a way of reducing costs such that it can continue to invest in maintaining the network. If the incumbent fails to identify efficiencies or continues to misallocate costs, the overall performance of the network will begin to decline. This decline would result in the fair cost of access falling and consequently even less revenue being available to the incumbent. Unless efficiencies were found to compensate, less resources would result in an accelerated decline in the performance of the network. This is asset stripping and clearly not in the interest of today's or future customers.

Ultimately, if the incumbent is not prepared to take the steps necessary to become efficient, then the owner of the infrastructure (in Scotland this is the Scottish Executive) would need to take action to ensure that the value of the assets to all customers is maintained.

The treatment/abstraction business may be subject to in the market competition when a common carriage licensing system is in place. However, it is not at all certain that the lack of the national network and the intrinsically local supply infrastructures may not limit these opportunities significantly. In any event, success in a competitive market will require unit costs in each

separate location to be minimised. In most cases this will require better management of capacity and, over the longer term, better sizing of assets to the needs of the business. Currently, there are assets where capacity utilisation is relatively low. In these cases, it would be appropriate to price according to the long run marginal cost of production in the area and, to the extent that the existing asset was oversized, recognise the financial loss.

For the market competition may play an increasingly important role in ensuring that value for money (i.e. a better service at a lower cost) is made available to customers. Contracting out of services so that management has an opportunity to compare the performance of a contractor with their own internal performance is likely to be a catalyst in improving overall efficiency significantly. These comparisons will, however, only be workable if there is sufficient attention paid by the Board to the allocation of costs across the activities of the organisation.

k) Impact on customers

Competition should normally benefit customers. It may or may not benefit the incumbent supplier. Customers will benefit through greater choice, lower prices and better levels of service. It is vital that the incumbent understands the way in which competition can occur, the impact of this on revenue and the incidence of his costs of supply, if he is to be successful. Responding effectively to competition will be primarily about addressing the issue of cost. If the Scottish water industry can approach the efficiency frontier, there will be little to worry about outside the retail sector. The next two chapters look at the limited revenue implications for the Scottish water industry and then the essential issues to be addressed if the authorities are to ensure they have a proper understanding of costs.

Section 3: Chapter 12

Competition: Background to the Utilities Sector

a) Introduction

The previous chapter discussed how competition might develop in the water sector. It concluded that there is a significant element of natural monopoly and that there are other constraints (e.g. the lack of a national water grid), which will limit the amount of competition in the market. The exception to this is retail activity, where competition is likely to be significant and scale and scope economies are likely to be essential for success.

Significant competition has developed in the electricity and gas sectors over the last few years. This competition has been primarily in the retail sphere or in exploration/ generation. The market for support services, such as meter reading, has also become competitive. The natural monopoly elements of both electricity and gas have become increasingly tightly ring-fenced. Regulation has forced the natural monopoly businesses to become much more efficient in terms of their operating and capital costs. The gas and electricity industries have therefore gone through a period of dramatic change over the last decade, driven principally by the policy objectives of successive governments.

The utilities were at the forefront of the privatisation agenda in the late 1980s and early 1990s. New regulatory structures to provide accountability were established. The monopolistic nationalised industries were transferred to the private sector, underwent significant restructuring, and had their markets opened up to competition. The result in both electricity and gas has been the

same: industrial, commercial, and domestic customers now have a choice of suppliers. The journey to this competitive marketplace has, however, been different in each case. This chapter provides an overview of the transition to the competitive market in these industries and the extent to which the former vertically integrated monopoly activities have become competitive. It continues with a review of the failures of liberalised markets and concludes with a summary of the key success factors. This summary will confirm the hypothesis of the previous chapter that competition in the market can only develop in areas demonstrably separable from the natural monopoly. In other areas, the customer interest requires regulation to ensure that costs are kept to the minimum sustainable level.

b) The introduction of competition into the gas industry

Like the water industry, there was an element of competition in the gas industry for several years prior to its privatisation, and certainly long before competitive choice became a goal of regulators and government. The largest users (those using over 25,000 therms per year) had a choice of suppliers. This right was confirmed in the Gas Act 1986, which principally provided for the privatisation of British Gas. The commercial and industrial gas supply market was fully opened up in the late 1980s. By 1998 there was full competition in the gas industry for commercial, industrial and domestic customers.

The development of competition in the gas industry went through several stages and is summarised in Table 12.1.

Table 12.1: Development of the gas industry 1982–98

Date	Development
1982	• Large users (over 25,000 therms) allowed to use alternative suppliers after Oil and Gas (Enterprise) Act
1986	• Privatisation of British Gas (BG) as a single vertically integrated entity, covering production, distribution and supply. The Gas Act also enhanced previous legislation, which allowed large users to use other suppliers
1988	• Monopolies and Mergers Commission (MMC) finds British Gas has abused its dominant position, particularly with respect to large users. British Gas was required to produce price schedules for large users, and to publish standard common carriage terms.
1992	• Competition and Service (Utilities) Act gave regulator, then Ofgas, a duty to secure competition in the industry and lowered the competitive threshold to 2,500 therms/year. Within 3 years, British Gas' share of the competitive market had fallen to 20%.
1993	• Second reference to MMC led to proposal that BG should divest itself of trading activities by 1997, with an accounting separation of the business by 1994. Secretary of State accepted a compromise, allowing all activities to remain part of BG, conditional on full accounting separation and open access to the entire gas supply market by 1998.
1995	• Gas Act 1995 amended the 1986 Act to allow the creation of an industry structure comprising public gas suppliers, public gas transporters and gas shippers.
1996	• Introduction of Network Code, providing procedural infrastructure for open access to the network. Phase 1 pilot of domestic competition. British Gas announces demerger into BG plc (incorporating Transco, public gas transporter) and Centrica (whose subsidiary, British Gas Trading – BGT – acts as gas supplier).
1997	• Domestic competition phase 2 pilot.
1998	• Full domestic competition.

The Office of Gas and Electricity Markets (Ofgem) now regulates the gas industry through a licensing regime established by the Gas Act 1986 and amended by the Utilities Act 2000. The Act describes the three activities to be licensed:

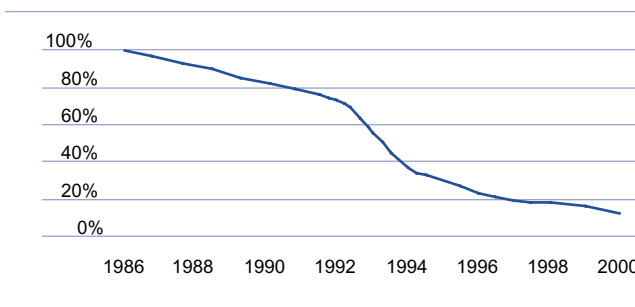
- gas transporter,
- gas shipper, and
- gas supplier.

Gas producers¹ (eg from the North Sea and Irish Sea) compete with one another to sell gas to the shippers. Shippers then arrange for the gas to be transported to a supplier. Almost the entire transportation network in the UK is owned and operated by Transco. As a monopoly, Transco's revenue is regulated by Ofgem, which sets a revenue cap for the company. Finally, the gas supplier provides the interface with the customer. The supplier will be the company that bills customers for the gas they use and for other services such as handling the customer's account, reading the meter, transportation and storage of the gas.

Up until now, British Gas Trading's supply prices have been regulated by Ofgem, due to its continuing dominance in the domestic supply market. Controls are still applied to late pay and prepayment tariffs. However, it is expected that these price controls will be phased out in the near future, as the domestic supply market becomes fully competitive. The regulatory regime requires all stages of the supply process to be licensed as separate activities. In practice, a large conglomerate may be involved in exploration, transport, shipping and supply, but if it is, there has to be full and complete accounting separation between those businesses.

The impact of the introduction of retail competition has been dramatic (see Figure 12.1). Between the year 1986 and 1999, British Gas Trading's (BGT) market share by volume shipped to the industrial and commercial sector had fallen from 100% to 17%. By 1999, there were three shippers other than BGT, who had a market share of more than 10%. Indeed, in the first quarter of 1999-2000, two shippers had a market share greater than that of BGT. This shows the extent to which competition has progressed in the retail gas industry. The British Gas monopoly has been conclusively removed - at least in the industrial and commercial sector.

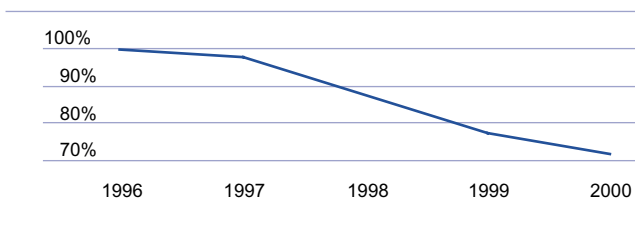
Figure 12.1: BGT share of commercial/industrial market



It is perhaps inevitable that competition should bring benefits first to the large users who have some degree of buyer-power. This is especially true in the retail gas sector, where large users had enjoyed an element of choice of supplier prior to privatisation. For competition to be successful, however, there must be benefits for all customers.

In its last review of the domestic sector² Ofgem stated that almost all customers were aware of alternative gas suppliers, and in 2000 an average of just fewer than 60,000 domestic customers changed supplier each week. This brought the total number of domestic customers who had switched supplier to around six million. During the year a further 2.5 million customers had signed up to dual fuel packages where the same company supplies gas and electricity. Competition appears to have developed in particular with customers who pay by direct debit, and BGT's market share has continued to fall, to around 70%. Transferring to one of BGT's 15 competitors could lead to a reduction of up to 20% for some domestic customers.

Figure 12.2: BGT share of domestic market



¹ The Department of Trade and Industry handles the allocation of licences for exploration and production on behalf of the government.

² *A Review of the Development of Competition in Domestic Gas and Electricity Supply*, Ofgem, December 2000.

In contrast, however, the monopoly position of Transco has remained.

The gas distribution network is similar to the water network in that it is a clear natural monopoly. However, an important difference is that the network is national and there are a number of points at which gas can be put into the network. This has facilitated competition in the upstream supply process which is in marked contrast to the water industry.

c) Development of competition in the electricity industry

The UK electricity industry has followed the gas industry through the significant changes brought about by privatisation and liberalisation. Privatisation occurred later than in the gas industry, and, unlike in the gas industry, the privatisation process was an integral part of the liberalisation of the market. The introduction of competition happened very much quicker than in gas, but with very similar effects. In many ways, there is now a retail market for energy services as opposed to two separate markets for electricity and for gas. There is no doubt that lessons were learned from the experience of liberalising the gas industry and these had an impact on how competition developed in the electricity industry. Full competition was a reality in the retail domestic electricity market by May 1999.

The current framework for the electricity industry was set out in the Electricity Act 1989 and was developed by the Utilities Act 2000. As in the gas market, Ofgem is the regulator of all aspects of the industry. The 1989 Act originally provided for three activities to be licensed in relation to electricity supply – generation, transmission and supply. At the time of

privatisation, the 14 electricity area boards became 14 Public Electricity Suppliers (PESs), each licensed to supply electricity in a specified area. Scotland was treated slightly differently, since the two PESs were granted consolidated licences, which allowed them also to carry out transmission and generation activities. Scottish Power and Scottish Hydro Electric, now a subsidiary of Scottish and Southern Energy, hold these licences. In England and Wales there was only one transmission licence in existence, which is held by the National Grid Company. There were three generators of electricity: National Power, Powergen and British Energy.

There has been considerable progress in the development of competition in the market, both in generation and at retail. The wires business (the transmission and distribution networks) has remained a local or national monopoly. There are now around 50 generating companies in the electricity industry. These companies compete against one another to produce and sell electricity. The initial system was that the generators would quote a price for supply and that all suppliers would receive the same price at which demand balanced with supply. This meant that suppliers who could not easily vary their generation output would bid a very low price in order to ensure that their electricity would be sold.

Ofgem introduced the New Electricity Trading Arrangements (NETA) in March 2001. This was designed to put further downward pressure on electricity generation prices. The arrangements place a premium on predictability, since there is likely to be a very high degree of price variance for electricity generated outside long-term agreements. A recent study by Ofgem on the effects of NETA would appear to confirm its success. Wholesale electricity prices are now 20-25% lower

Table 12.2: Development of the electricity industry 1989–2000

Date	Development
1989	• Electricity Act 1989 provides framework for introduction of competition in the electricity industry.
1990	• Competition begins for industrial and commercial customers with a maximum demand over one megawatt
1994	• Competition extended to customers with maximum usage over 100 kW
1998	• Domestic competition rolled out, with customers gradually being phased in according to their postcode.
1999	• Competition extended to all customers.
2000	• Over 4 million (16.5%) electricity customers had left their home supplier. It was in the Midlands and East Midlands areas that new suppliers had most success.
2000	• Utilities Act places a primary duty on the regulator to promote the interests of consumer, gives greater regulatory powers against anti-competitive practices and enables the introduction of new wholesale electricity arrangements (NETA).

than would have been expected under the previous pool arrangement. There is also greater market liquidity, with a threefold increase in the volume of trades and a doubling of the number of contracts struck compared with last year.

After generation, the electricity is put into the National Grid (in England and Wales) at high voltage, where it is carried along pylons to the regional distribution companies. In Scotland, this is done by Scottish Power and Scottish and Southern Energy. As this is a natural monopoly activity, Ofgem sets price limits on electricity transmission. The electricity is then distributed around the designated supply regions and steadily transformed to lower voltages as it moves towards the 240 volt supply required by households. In England and Wales, this is the responsibility of the 14 PESs and in Scotland of Scottish Power and of Scottish Hydro Electric. As with transmission through the national grid, Ofgem regulates the price of electricity distribution at a national level. This too is a natural monopoly and there is little or no likelihood of in the market competition.

Until recently, the public electricity supplier handled both distribution and the retail supply to customers. Ofgem has, however, required the separation of the distribution and supply activities into separate legal entities. It is likely that this will further increase in the market competition for the retail market and will improve both service and prices available to customers. Ofgem does still set retail price limits, because of the residual monopoly effect at a local level, but this has become a true maximum and is de facto little more than a safety net. Competition has typically ensured that a lower price has been available to customers. It is expected that these price limits might be removed from 2002 onwards. As with the gas industry, it is common for supply and generation licences to be held by a single conglomerate, however as in the gas industry, the regulatory regime requires total separation of the different parts of the industry value chain.

There is some evidence that there will be a significant consolidation in the number of electricity retailers. Innogy, the holding company which owns National Power, has made a number of moves to strengthen the position of its Npower brand. In March 2000, Npower launched a wide range of price and payment options, offering one of the most comprehensive choices for residential customers in the UK.

Price options included:

- the choice whether or not to have a standing charge,
- dual fuel for three years at a capped rate,
- dual fuel direct debit discount,
- single fuel with a direct debit discount.

The company recently set up an alliance with Greenpeace to provide a product called 'Juice'. This scheme enables 50,000 domestic electricity customers to receive their electricity from clearly identified, entirely renewable sources at the same costs as any other customer.

In addition, Innogy recently acquired the supply and distribution business of Yorkshire Electricity, and during summer 2001 announced that it would swap the distribution assets of Yorkshire Electricity for the retail supply business of Northern Electric. This increased Npower's total number of retail customers to approximately 7 million.

Similarly, Powergen, another company with its origin in generation has looked to expand its retail customer base. It has acquired East Midland Electricity, (EME), the distribution and supply company for the East Midlands area. EME serves some 2.4 million customers. Powergen now has a total customer base of around 3.2 million.

Scottish Hydro Electric has also been keen to expand its customer base. In April 2000, it merged with Southern Energy and in 2001 acquired the assets of SWALEC from WPD. Centrica (the retail arm of British Gas) has also been active in acquiring electricity retail customers and has now reached approximately 4.4 million.

The market shares of the leading electricity supply companies in the domestic market as at December 2000 are shown in Table 12.3.

Table 12.3: National market shares³

Supplier	Market share by customers supplied
Npower	18%
TXU Europe	17%
Scottish and Southern	17%
Scottish Power	12%
London Electricity	11%
Centrica	10%
Powergen	8%
Seaboard Energy	7%
Others	<1%

The first five companies in the table own at least two PESs, with Scottish and Southern Energy owning three. BGT (Centrica) is the only supplier with a market share of more than 1% that does not own a PES supply business, and has attracted all of its customers through sales and marketing. Customer switching rates during 2000 averaged just under 140,000 per week. The average price reduction approached 17% compared with the incumbent PES. The PESs' shares of their regional markets vary across the country, from 67% to 94% of customers.

d) Similarities to the water industry

It has become commonplace to describe the electricity and gas sectors as competitive, but this competitive element has appeared only in those elements of the value chain where there was not a significant element of natural monopoly. Indeed, there is no sign of competition in any of the activities that are demonstrable natural monopolies. The elements of natural monopoly are, however, greater in the water sector. The likely consequence is that competition for the market will probably be a greater factor in the water industry, than in electricity and gas, where in the market competition was possible in the upstream value chain.

The local nature of the water distribution and sewage collection infrastructure is the major single difference between the water sector and the gas and electricity sectors. This introduces an extra element of natural monopoly into the water and sewage treatment activities. Unlike in electricity and gas, if water is treated at a particular location, it can be distributed only to specific, limited locations. There are also limits to the length of time treated water can be stored. This obviously limits the demand for the treated water to the area where it was

produced. Since there are clear economies of scale in treatment, there are very significant barriers to entry if the incumbent is efficient.

e) Successes of utilities

i) Value for money

One of the main aims of government and regulators when introducing competition to the utilities was to increase efficiency. This greater efficiency would sustainably reduce costs and hence prices. This policy would appear to have been successful. Prices have fallen in both the gas and the electricity sectors.

Industrial gas prices fell by over 40% in real terms between 1992 and 1996, and in 1999 prices were some 45% lower than in 1990. There have also been benefits to domestic customers. Since competition was introduced to the domestic market (during 1997 and 1998), new gas suppliers offer savings of around £50 on an average gas bill of £315.

In the electricity market, there has been a similar pattern. Industrial prices in 1999 were 22% lower in real terms than in 1994. They were 26% down on 1990. Domestic prices were also lower by 1999. New suppliers typically offer savings of between £10 and £40 on an average £270 bill.

This has been possible because the introduction of competition has forced the energy industry to become more efficient. Table 12.4 sets out the range of tariffs that are available to customers in the Eastern area.

A direct debit customer who has used the internet arm of Amerada can expect to pay £195 per year. The same customer who remains with the incumbent would pay £226. Savings of up to 15% are therefore available.

ii) Improvements in customer service

One of the recurring themes of this Review is that a fall in costs is only an efficiency if standards are, at worst, maintained. The experience of other utilities would suggest that it is possible to improve standards at the same time as reducing costs. The regulator has consistently raised the expected standard of service

³ Source: "A Review of the Development of Competition in Domestic Gas and Electricity Supply", Ofgem, December 2000.

The figures have been adjusted to take account of Npower's acquisition of the supply businesses of Yorkshire Electricity and Northern Electricity.

Table 12.4: Eastern area – annual bill (standard rate electricity)

Medium user	Amerada	Atlantoc	Basic Power	British Gas	Eastern Energy	London Electricity /Sweb	Northern Electric & Gas	Npower	Powergen	Scottish Power	Seaboard Energy	Southern Electric	Amerada.co.uk
Direct debit	£198	£198	£211	£209	£226	£202	£202	£202	£212	£203	£207	£201	£195
Standard Credit	£213	£208	£224	£220	£232	£213	£212	£208	£222	£223	£215	£212	£222
Pre-payment	£302	£243	£236	£230	£243	£290	£262	£260	£238	£243	£242	£244	-

that was required of energy companies. Competition seems to have had a positive impact on the level of customer service.

Ofgem data shows that the number of failures to meet guaranteed standards per 100,000 electricity customers has fallen consistently, from over 50 in 1991-92 to under 10 in 1998-99⁴. The number of electricity interruptions per customer has fallen by 30% since 1990 and, more importantly, the number of minutes customers are left without supply has fallen to around a third of the 1990 level. Customer service has also improved markedly. In 1996, British Gas responded to 76% of letters within five days – by 1999 this was 100%.

iii) Delivery of environmental improvements

It is imperative that opening up competitive markets or achieving cost savings should not jeopardise compliance with the relevant environmental standards. Doing so would again not qualify as an efficiency under my definition. The electricity industry appears to be contributing to reductions in carbon dioxide emissions that are required. Between 1990 and 1999, total emissions were down 7.5%, despite an increase in energy consumption of some 5.5%. CO₂ emissions from power stations fell by 28.5% over the same period. Around half of that decrease was attributed to greater efficiency in electricity generation, and half to the use of less carbon intensive fuels such as gas and nuclear instead of oil and coal. Competition and pressure for efficiency does not seem to have had any negative impact on environmental performance.

iv) Improvements in levels of service in the water sector

Since 1991, water industry performance in England and Wales has shown a steady improvement across a range of levels of service indicators. These improvements reflect the continuing efforts of companies to improve service to customers, and in particular to reduce problems of low pressure and the risk of sewer flooding. Table 12.5 below highlights the improvements made in key areas over the past decade.

In order to put this into full perspective, it is important to note that the companies have become some 50% more efficient in terms of operations and capital expenditure during the same period (see Chapters 18 and 19).

f) Failures of liberalised market

i) Mis-selling of bundled services

Liberalisation of the retail energy market led to a determined effort by a number of companies to increase their market share. The tactics of some commission-based sales people quickly became a matter of concern.

In response to complaints about doorstep sales practices, a marketing condition was added to gas and electricity suppliers' licences in January 1998. The condition lays down rules about the way in which companies sell and follow up contracts signed on the doorstep. It also covers telephone selling. There are requirements for suppliers to ensure that agents are managed properly to prevent mis-selling by their staff or agents on the doorstep. These rules require sales agents to make it clear to a customer that he or she has entered into a contract. The rules also require gas companies to provide a written copy of the terms and conditions of their contract within two days to customers who respond to telephone sales.

This measure appears to have been effective since less than 8 people per 10,000 transfers have complained.

ii) Independent Energy

Independent Energy was one of the new retailers who entered the electricity and gas retail markets in September 1998.

Independent Energy very quickly acquired a large customer base, both in the electricity and gas markets. It adopted aggressive marketing techniques, including door step selling, and held roadshows to encourage customers to switch. Within two years, Independent Energy had 240,000 domestic and

⁴ Quoted in DTI, *The Social Effects of Liberalisation: the UK Experience*, Lisbon 5/6 June 2000.

Table 12.5: Levels of service for the water industry in England & Wales in 2000-01⁵

Description	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Properties at risk of low pressure	1.85%	1.69%	1.26%	1.02%	0.80%	0.78%	0.43%	0.25%	0.16%	0.13%	0.11%
Properties subject to unplanned supply interruptions of 12 hours or more	0.42%	0.2%	0.38%	0.35%	0.26%	0.58%	0.21%	0.15%	0.05%	0.06%	0.11%
Written complaints not responded to (within 10 working days)	31.09%	25.64%	18.14%	24.12%	5.48%	5.79%	5.07%	1.99%	1.28%	0.64%	0.44%
Properties subject to hosepipe bans	41%	13%	12%	0%	3%	39%	30%	3%	3%	0%	0%
Company estimates of total leakage (MI/d)	-	-	-	-	5,112	4,980	4,528	3,989	3,551	3,306	-

commercial electricity customers and 80,000 gas households. The company admitted in May 2000 that it faced significant problems setting up accounts and billing many of its customers. Detailed discussions were held with Ofgem to try to resolve the problem.

The situation for Independent Energy worsened when problems with its call centre meant that customers could not contact the company to discuss their problems. This resulted in a significant increase in complaints to Ofgem.

An agreement was reached between Ofgem and Independent Energy on a new licence condition, which set out requirements for performance in customer service. The new licence condition required the company to:

- transfer customers properly;
- process customer cancellations effectively;
- issue accurate and timely bills;
- improve the ways that customers could contact the company; and
- deal properly with queries and complaints.

Independent Energy also agreed not to take on any new domestic or small business electricity customers, and to stop its marketing activities.

The billing and cash collection problems did not improve and on 8 September 2000, Independent Energy called in the receivers.

The company stated that it had “explored the available avenues to find a solution to its billing and cash collection problems but was unable to find a solution which was acceptable to its lending banks”.

Independent Energy was ultimately bought by Innogy for £10 million.

This example clearly shows the risks involved in the retail of utility services and the ease with which “apparent success” can become failure.

⁵ Ofwat, *Levels of service for the water industry in England and Wales 2000-2001 report* July 2001.

iii) Electricity/water mergers

There have been three high profile mergers between water and electricity companies. The rationale for each of these mergers - synergies in the customer base - has now proven to be more illusory than actual. Scottish Power's acquisition of Southern Water and North West Water's acquisition of Norweb, whilst bringing some benefits to customers in terms of efficiency, have not produced either the return expected by shareholders or the expected improvements to customer service. The merger of Welsh Water (Dŵr Cymru) and SWALEC is discussed below.

g) Hyder: A case study

Welsh Water (Dŵr Cymru) made a number of acquisitions outside its core water business in the early years after privatisation. These acquisitions ranged from hotels to a healthcare procurement company. Considerable management attention was also devoted to the development of other activities, including a consulting business. This diversification was funded by the core water business. As a result of the diversification insufficient management time appears to have been focussed on the core business.

The diversifications of Welsh Water (Dŵr Cymru) and the funding of the large investment programme resulted in a worsening debt profile. However, this became a more immediate problem with the acquisition for cash of SWALEC in 1996. The rationale behind the merger was that the creation of a multi-utility by merging the Welsh electricity and water companies would provide significant operational and customer synergies. This strategy was undone by the tough regulatory review of the electricity sector in 1998, which meant that the level of debt became a major drain on resources.

The 1999 water price review made Hyder's position untenable. This review judged Welsh Water (Dŵr Cymru) to be the least efficient water company in England and Wales. Welsh Water (Dŵr Cymru) disputed this ranking but did not appeal to the Competition Commission.

During the first half of 2000, Nomura, the Japanese Investment Bank, made an offer for Hyder plc. The situation became highly competitive and quite bitter when an American electricity company, Western Power and Distribution (WPD) entered into the picture. The battle was finally won by WPD after sealed bids

(for the first time ever) had been required by the Take-Over Panel.

WPD had no interest in retaining the water business and had agreed initially to sub-contract the operations to United Utilities (the parent company of North West Water). This plan was challenged in court by Severn Trent plc on the grounds that this arrangement was in breach of the European Procurement Directive. Severn Trent won the case and this led to the original agreement being nullified.

Two executives from Welsh Water (Dŵr Cymru) had been charged by the Board of Hyder to find an alternative to the Nomura bid. Their answer was to establish Glas Cymru, as a not-for-profit company limited by guarantee, in March 2000. This company was established with the sole purpose of acquiring and owning Welsh Water (Dŵr Cymru). This transaction was finally completed in May 2001, when Glas Cymru bought Welsh Water (Dŵr Cymru) from WPD for £1.85 billion, 95% of its regulatory asset value.

Glas Cymru is owned and controlled by members who do not receive dividends or have any other financial interest in the company. It has no shareholders and is almost entirely financed by debt in the form of long maturity, strong investment grade bonds.

The transaction required regulatory approval. This was not easy since the proposal for the company to be 100% debt financed was generally regarded as radical. There were (and in some quarters are) significant concerns about the long-term performance of a company that does not have to account to its shareholders for its performance. Before Ofwat consented to Glas' proposals they consulted widely and developed six conditions which Glas had to satisfy in order to gain regulatory approval. These were that Glas:

- agreed to the licence modifications proposed by Ofwat;
- gave a public commitment to reductions in charges for customers;
- made public its incentive scheme for executive management;
- provided a public statement on its commitment to limiting its activities to the single purpose of providing water and sewerage services;

- gave a public commitment to appoint the members of Glas Cymru on the basis of best practice;
- confirmed that the rights proposed for bondholders would not impede the Director's duties under the Water Industry Act 1991.

Fears that it may be difficult to raise the finance for the transaction proved to be unfounded. The following series of measures were proposed, which reassured the debt markets that risk was minimised.

- Diversification outside of the water and sewerage business in Wales was precluded.
- Reserves would be built up to £350 million to protect creditors against any operational shocks.
- Operational and customer service activities were sub-contracted to United Utilities and to Thames Water.
- Special step in rights were created for bondholders if covenants were breached.
- Credit insurance through MBIA⁶ was arranged, which allowed a significant proportion of the bond issue to receive the highest possible Triple A rating.

The bond issue was placed with 79 investors in the UK and abroad. Just over £1.9 billion of asset backed bonds were issued to finance the purchase of Welsh Water (Dŵr Cymru). The issue was 70% over-subscribed.

One of the stated aims of the management of Glas Cymru is to try to reduce regulatory risk. It has removed the potential tension between regulator, customer and shareholder, by pledging that bills will be cut, with any surplus over and above that required to maintain the company's credit rating. It has introduced greater transparency - for example, its June Return was published on its Web Site at the same time as it was submitted to Ofwat, and the company's management incentives have been published.

There does seem to be a real likelihood that customers will benefit from the new structure. Glas Cymru owns the assets of Welsh Water (Dŵr Cymru), but whilst it has retained the strategic asset management function, it has sub-contracted all other activities. This has increased the proportion of work that is contracted out from 60% before the take over, to 85%.

Welsh Water (Dŵr Cymru) has entered into a four-year contract with United Utilities and Thames Water to manage its day-to-day operation and to bill customers. This significantly reduces operational risks for Welsh Water (Dŵr Cymru), indeed in price terms also it seems that Glas has benefited significantly.

These operating contracts will ensure that Welsh Water (Dŵr Cymru) comfortably beats the efficiency targets set for the current regulatory period by Ofwat. This performance and the reduction in the cost of capital achieved by Glas Cymru's 100% debt-funded structure will allow customers' bills to be cut by £10 per household before the end of this regulatory period. The cost of capital for Glas Cymru is about 4.1% net of tax, compared with the 4.75% net allowed by Ofwat for this period.

It is, of course, impossible to eliminate all risk. All structures are, in the end, vulnerable to shocks. The equity-funded model can be vulnerable to shocks if it is managed poorly, and customers would ultimately lose out. The current high credit ratings depend on Glas Cymru increasing its reserves from the current £150 million to £350 million by 2005. This should protect creditors from even quite a major shock: the 1995 drought, for example, cost Yorkshire Water Ltd. £49.3 million. This confirms that Glas Cymru has adopted a fairly prudent approach to its finances. The restrictions on the activity of Glas Cymru and the focus on reducing costs should ensure that the company is as well-placed as the equity-based companies to survive any shock.

The clear incentive structure that Glas Cymru has in place is another important factor. It aims to ensure that management is rewarded for success, i.e. generating the surplus that will allow customers' bills to be cut. These bonuses can be up to 80% of basic salary and have been subjected to full and proper scrutiny. They will only be earned if the performance of Welsh Water (Dŵr Cymru) does allow the customer rebate to be effected.

i) Key success factors

In my view there are three key success factors that will see Welsh customers benefit from this new structure.

⁶ MBIA Insurance Corporation, formerly known as Municipal Bond Investors Assurance Corporation, has guaranteed that the interest due on certain tranches of the bonds will be paid. These tranches have therefore acquired the highest possible rating.

Focus on costs

Glas Cymru has been quite innovative in addressing all of its costs. In the English and Welsh context, it is not surprising that the principal focus of commentators has been on the reduction in the costs of capital. This is because this funding cost does represent a challenge to existing, equity-based financing structures. However, just as impressive from a Scottish viewpoint is that the operational costs will be reduced considerably during this regulatory review period. Glas is also among the leaders in pioneering a partnership approach to the delivery of its capital programme. Early reports suggest that the programme will be delivered ahead of budget.

Focus on core activities

Glas Cymru's constitution limits its operations to the core activities of providing a water and waste water service within the Welsh Water (Dŵr Cymru) area. The company will be responsible for environmental and public health compliance and will take all the decisions about capital investment. Welsh Water (Dŵr Cymru) has retained its strategic asset management function, as this is the core of the water business.

Incentive to management

It is important from a customer's perspective that the promises on bills that have been made during the establishment of Glas are realised in practice. The alignment of management bonuses with the promised reductions in bills is a very positive step.

I believe that all three of these factors are important and appropriate lessons should be learned for Scotland. However I discuss the issue of incentives in Chapter 26 and the issues surrounding diversification in Chapter 27. The greater part of this Review is dedicated to the proposition that the customer interest is best served by increasing the efficiency of the water industry.

h) Overview of the key success factors and conclusion

There are five principal lessons that I believe should be learned from developments in the utilities sector in the last decade.

These are the importance of:

- understanding the businesses of utilities,
- focusing on key competences,
- focus on cost reduction,
- effective governance,
- regulatory scrutiny.

i) Understanding the businesses of utilities

The development of competition in the electricity and the gas industries has brought significant benefits to customers. The truly competitive elements are, however, quite limited at the production and retail ends of the value chain. The key to encouraging competition has been to separate the natural monopoly element of the value chain from those areas where the barrier to competition was the dominance of the incumbent and the manner in which a process had been done (e.g. meter reading).

The principal difference between the electricity and gas sectors and the water sector is the absence of a national grid. This will mean that competition in the production of potable water or the treatment of sewage will only be possible at a relatively local level. In many cases, if not most, abstraction and treatment is likely to retain significant aspects of natural monopoly.

Competition in retail activities and the potential for 'for the market' competition will play an important role in driving inefficiency out of any business process. This has been clearly demonstrated by the improvements in customer service and the lower costs from which other utilities' customers have benefited. Welsh Water (Dŵr Cymru) is a clear example of the potential benefits of for the market competition. Regulation of the natural monopoly activity is, however, equally important, as this ensures that the activity becomes more efficient. All customers benefit from genuine efficiency.

ii) Focusing on key competences

The less successful companies in the water, electricity and gas sectors in England and Wales have lost sight of their core competences, that is the activities which they do well. This loss of focus has taken two directions: firstly, diversification outside the core business and secondly, a failure to recognise that some activities may be better out-sourced than done in-house. The risks of diversification are quite clear from the Welsh Water (Dŵr Cymru) case study. The rapid progress that will be made

by Welsh Water (Dŵr Cymru) in the new Glas structure towards the efficiency frontier is clear evidence of how out-sourcing can bring benefits, by allowing management to focus on the key activities that are critical to ensuring a sustainable future for the organisation.

iii) Focusing on cost reduction

The challenge for management is to ensure that there is a proper balance between the need to cut costs in the core natural monopoly business (and the benefits, which will accrue to customers) and focused effort on revenue retention in the competitive areas of the value chain. In the water sector, losing 10% of retail business increases unit costs by about 1.0%. For the Scottish authorities, which are a long way from the efficiency frontier, there are easier ways to improve customer value by 1.0%.

It is likely that the most leveraged activity from a customer standpoint is to ensure that the organisation is as efficient as possible. A proper focus on costs will ensure that tariffs can be made more reflective of the actual incidence of costs. As such, the threat to revenue even in the competitive area of the business is likely to be significantly reduced.

I discuss the importance of accounting separation in Chapter 14. This separation of activities is an important mechanism to ensure that costs for customers are minimised.

iv) Effective governance

The role of the Board is to ensure that the organisation and its management stick to a clear and sensible strategy. Effective corporate governance is rarely noticed, but failures become apparent very quickly, often with negative implications for customers and shareholders. Effective corporate governance will result if the Board sets a clear strategy, which includes close attention to costs and keeps sight of the principal reason why the organisation exists.

v) Regulatory scrutiny

Regulatory scrutiny will help to ensure that costs are minimised. In part this will result from separating out the competitive activities and ensuring that the necessary transparency is created in order to facilitate competition. The most critical role of regulation is, however, to ensure that the natural monopoly is made efficient.

The other important area is the transparent assessment of performance. The Ofwat service and efficiency league tables and the Ofgem and Oftel websites, which allow bills to be compared are good examples of this. This public comparison must be taken seriously by management, by Boards and by shareholders. There would seem to be a significant benefit in comparing the performance of the Scottish water industry with its peers in England and Wales.

In Scotland, we are able to learn from the water industry south of the Border or from other utilities. It is clear that these industries have benefited by embracing competition in those areas where it ought to exist, and by focusing on cost reduction in the natural monopoly element of the value chain. There are dangers in losing sight of the most important issue - the delivery of a good service at an acceptable price. This requires a focus on cost reduction. Non-core activities may well prove to be more of a distraction than a benefit and should be very carefully assessed. This is an issue to which I return in Chapter 27.

Section 3: Chapter 13

Competition: Scottish Water Industry Revenues

a) Introduction

In Chapter 11, I analysed the likelihood of competition in the Scottish water industry. I concluded that if the Scottish water industry were efficient, competition would have only a marginal impact on revenues. This crucially depends on structuring tariffs that broadly reflect costs.

In this chapter I analyse the current tariff structure and revenue breakdown of the authorities. I then assess the likely impact of harmonisation of charges in Scotland on various typical customers. I close the chapter with a review of the potential impact of 'retail' competition on the industry and the advantages it would bring from a customer standpoint.

Over 96% of Scottish consumers are connected to the water and 92% to the sewerage systems operated by Scotland's three public water authorities. Customers have become much more aware of their water charges because of recent increases.

There have been three factors that have had an adverse impact on the levels of charges over the last five years. These were:

- direct charging for waste water,
- harmonisation of charges,
- increased investment.

Charges are now harmonised for domestic customers in each of the three water authority areas. Waste water charges are paid by

all domestic customers who are connected to the public sewerage system. Under investment in the past 20 or 30 years means that investment must again increase during this regulatory period if the system is to be properly maintained and environmental and public health compliance ensured. This will unfortunately lead to a further increase in average charge levels in Scotland.

It is important to understand what the impact of harmonisation of charges across Scotland will be if the proposed Scottish Water is approved. Customers need to understand the timing and extent of any increase in charges. This allows them to manage the impact of any increases on their budgets.

b) Funding of the Scottish water industry

The Scottish water industry has 2.26 million domestic customers and over 180,000 non-domestic customers. Tables 13.1-13.4 below show the increases in revenue paid by customers since the water authorities were established. Water charges have increased by 38.5% and sewerage charges have increased by 142.7%. Of the increase in sewerage charges, 91.5% resulted from the policy decision to charge directly for sewerage services.

Borrowing, which counts as public expenditure, also increased markedly during the period. The increase in borrowing over the first five years of the authorities' existence was over £930 million. This increase in borrowing has delayed the impact on charges of the increase in the investment programme. However the industry

Table 13.1: Funding of East of Scotland Water Authority

East	1996-97	1997-98	1998-99	1999-00	2000-01	% Change 1996-2001
Water	£93.5m	£101.2m	£111.8m	£117.0m	£133.4m	42.7%
	n/a	8.2%	10.5%	4.7%	12.6%	
Waste water	£40.0m	£52.8m	£72.2m	£89.0m	£98.9m	147.2%
	n/a	32.0%	36.7%	23.3%	11.1%	
Transitional relief	£27.3m	£18.2m	£9.1m	(100%)	£0m	(100%)
	n/a	(33.3%)	(50%)	£0m	n/a	
Other	£0.7m	£0.91m	£0.91m	£0.88m	£0m	(100%)
	n/a	30.5%	0.1%	(3.4%)	(100%)	
New debt	£64.0m	£56.4m	£50.4m	£78.5m	£73.4m	14.7%
	n/a	(11.9%)	(10.6%)	55.8%	(6.5%)	
Capital grants	£5.9m	£0m	£0.5m	£2.0m	£0.83m	(85.9%)
	n/a	(100%)	n/a	400%	(58.5%)	
Total	£231.4m	£229.5m	£244.9m	£287.4m	£306.5m	32.5%
	n/a	(0.8%)	6.7%	17.3%	6.7%	

cannot afford to keep borrowing at the same rate and, as a result, the increase in investment in this regulatory period will have a more direct impact on customers' bills. The efficiency targets that I have set will mitigate the need for an increase in charges – it will not, however, eliminate it.

Table 13.2: Funding of North of Scotland Water Authority

North	1996–97	1997–98	1998–99	1999–00	2000–01	% Change 1996–2001
Water	£64.8m	£68.5m	£74.5m	£80.1m	£107.83m	66.4%
	n/a	5.7%	8.8%	7.5%	34.6%	
Waste water	£32.9m	£44.5m	£55.9m	£72.4m	£99.4m	202.1%
	n/a	35.3%	25.6%	29.5%	37.3%	
Transitional relief	£22.4m	£14.9m	£7.4m	£0m	£0m	(100%)
	n/a	(33.5%)	(50.3%)	(100%)	n/a	
Other	£0.2m	£0m	£0m	£1.4m	£0m	(100%)
	n/a	(100%)	n/a	(100%)	(100%)	
New Debt	£41.6m	£47.9m	£43.7m	£39.7m	£50.0m	20.2%
	n/a	13.2%	(7.2%)	(9.2%)	25.9%	
Capital Grants	£24.3m	£1.6m	£2.7m	£3.9m	£2m	(91.8%)
	n/a	(93.4%)	67.4%	45.6%	(48.7%)	
Total	£186.2m	£177.4m	£184.2m	£197.5m	£259.2m	39.2%
	n/a	(4.7%)	3.8%	7.2%	31.2%	

Table 13.3: Funding of West of Scotland Water Authority

West	1996–97	1997–98	1998–99	1999–00	2000–01	% Change 1996–2001
Water	£125.5m	£131.5m	£135.2m	£140.6m	£151.9m	21.0%
	n/a	4.8%	2.8%	4.0%	8.0%	
Waste water	£75.7m	£89.3m	£117.2m	£138.1m	£162.43m	114.6%
	n/a	18.0%	31.2%	17.8%	17.6%	
Transitional relief	£40.8m	£26.6m	£13.3m	£0m	£0m	(100%)
	n/a	(34.8%)	(50%)	(100%)	n/a	
Other	£1.0m	£0m	£0m	£0m	£0m	(100%)
	n/a	(100%)	n/a	n/a	n/a	£0m
Borrowings	£76.5m	£62.4m	£71.3m	£94.4m	£85.4m	11.6%
	n/a	(18.4%)	14.3%	32.4%	(9.5%)	
Capital grants	£7.4m	£0m	£0m	£0m	£0m	(100%)
	n/a	(100%)	n/a	n/a	n/a	
Total	£326.9m	£309.8m	£336.9m	£373.1m	£399.7m	22.3%
	n/a	(5.2%)	8.7%	10.7%	7.1%	

Table 13.4: Funding of Scottish water industry

Scotland	1996–97	1997–98	1998–99	1999–00	2000–01	% Change 1996–2001
Water	£283.8m	£301.2m	£321.5m	£337.7m	£393.2	38.5%
	n/a	6.1%	6.7%	5.0%	16.4%	
Waste water	£148.6m	£186.6m	£245.3m	£299.5m	£360.7m	142.7%
	n/a	25.6%	31.5%	22.1%	20.4%	
Transitional relief	£90.5m	£59.7m	£29.7m	£0m	£0m	(100%)
	n/a	(34%)	(50%)	(100%)	n/a	
Other	£1.9m	£0.91m	£0.91m	£2.3m	£0m	(100%)
	n/a	(52.2%)	0.1%	150.8%	(100%)	
Borrowings	£182.1m	£166.7m	£165.4m	£212.6m	£208.8m	14.7%
	n/a	(8.5%)	(0.8%)	28.5%	(1.8%)	
Capital grants	£37.6m	£1.6m	£3.2m	£5.9m	£2.8m	(92.5%)
	n/a	(95.7%)	98.7%	85.6%	(52%)	
Total	£744.5m	£716.7m	£765.9m	£857.9m	£965.5m	29.7%
	n/a	(3.7%)	6.9%	12.0%	12.5%	

(NB Figures may not add exactly to totals due to rounding)

Customer charges are published in the water authorities' Schemes of Charges. These Schemes are produced annually and must be approved by me. The proposed tariffs and assumptions in the chargeable base have to be consistent with the revenue cap. If I cannot reach agreement with the authority, it is up to Scottish Ministers to make a determination.

Customers fall broadly into two main categories – domestic and non-domestic. Primary services include the provision of drinking water and sewage treatment and disposal. Secondary services include emptying septic tanks and supplying field troughs for agricultural use. All customer charges include the cost of billing, meter reading (where appropriate), and dealing with customer enquiries. Table 13.5 below divides overall revenue into primary domestic, non-domestic and secondary income (including trade effluent, but excluding inter-authority trading).

Table 13.5: 2000-01 breakdown of revenue

Revenue	East		North		West		Total	
Domestic	£128.65m	59%	£113.96m	57%	£176.40m	58%	£419.01m	58%
Non-domestic	£89.06m	41%	£86.33m	43%	£129.14m	42%	£304.53m	42%
Primary Total	£217.71m	100%	£200.29m	100%	£305.54m	100%	£723.54m	100%
Other	£7.13m		£6.93m		£8.72m		£22.78m	
Total	£224.84m		£207.22m		£314.26m		£746.32m	

c) Domestic customers

There are very few domestic metered customers. The amount paid for water and sewerage services is based on the Council Tax band of the property. Most customers are billed for water and Council Tax by their local authority. Local authorities are paid by the water authorities for this billing and collection service.

The total required revenue for the water authority from the domestic sector is divided by the total Band D equivalent households in their area. Three Band A households equal two Band D households. One Band H household equals two Band D households. This allows a Band D charge to be fixed and the other charges are calculated on a pro-rata basis. Some customers may be eligible for a reduction in their water and sewerage bill. For example, a 25% discount is available where only one person occupies the property or a discount of 50% is available where the property is not the customer's main residence. The cost of these allowances has to be subtracted from the revenue projected by multiplying the number of Band D equivalent households by the appropriate tariff.

Table 13.6: Calculation of water and sewerage bills 2001–02

	Council Tax Band A	Council Tax Band B	Council Tax Band C	Council Tax Band D	Council Tax Band E	Council Tax Band F	Council Tax Band G	Council Tax Band H
	6/9ths of Band D	7/9ths of Band D	8/9ths of Band D	9/9ths of Band D	11/9ths of Band D	13/9ths of Band D	15/9ths of Band D	18/9ths of Band D
East	£180.00	£210.00	£240.00	£270.00	£330.00	£390.00	£450.00	£540.00
North	£233.45	£272.36	£311.27	£350.18	£428.00	£505.81	£583.63	£700.36
West	£177.60	£207.20	£236.80	£266.40	£325.60	£384.80	£444.00	£532.80

d) Non-domestic customers

Most non-domestic customers are charged according to the volume of water they receive. Non-domestic customers also pay a fixed charge. These fixed charges vary according to the size of the meter. The volume of water consumed is metered, or in some cases where a meter is not yet installed, charges calculations are based on an estimated volume that is linked to the property's rateable value. East of Scotland Water Authority bases charges on the diameter of the supply pipe.

Waste water charges for metered customers are based on the assumption that the volume of waste returning to sewer is 95% of the clean water entering the premises. This may vary if the customer can demonstrate that a lower volume of waste returns to the sewerage system. A bowling green that uses an irrigation system is an example of a relatively large user of water who might return a relatively lower proportion to sewer.

For East and West of Scotland Water Authorities, non-domestic customer charges also include a surface water drainage charge that relates to the surface area of the property that drains to the public network.

Table 13.7: East of Scotland Water Authority non-domestic water charges

Meter size	Annual charge	Meter size	Annual charge
6 mm	£6	75 mm	£4,300
8 mm	£12	100 mm	£9,100
10 mm	£21	150 mm	£26,500
13 mm	£43	200 mm	£56,400
18 mm	£100	250 mm	£101,500
25 mm	£240	300 mm	£164,000
30 mm	£385	400 mm	£349,300
37 mm	£670	450 mm	£476,000
50 mm	£1,475	600 mm	£1,015,000
63 mm	£2,700		

The water authorities bill non-domestic customers directly. Tables 13.7-13.17 below show the tariffs for non-domestic customers in 2001-02.

Table 13.8: East of Scotland Water Authority volumetric water charges

Tariff Type	Price
Tariff up to 100,000 m3 per year	£0.61 per m3 of water supplied
Tariff from 100,000 m3 to 250,000 m3 per year	£0.549 per m3 of water supplied
Tariff over 250,000 m3 per year	£0.5185 per m3 of water supplied

Table 13.9: East of Scotland Water Authority non-domestic waste water charges

Calculated pipe size	Annual charge	Calculated pipe size mm	Annual charge
6mm	£10	50 mm	£2,760
8mm	£22	63 mm	£5,060
10mm	£40	75 mm	£8,000
13mm	£80	100 mm	£17,100
18mm	£190	150 mm	£49,600
25mm	£450	200 mm	£105,600
30mm	£720	250 mm	£190,000
37mm	£1,250		

Table 13.10: East of Scotland Water Authority volumetric waste water charges

Volume charge	£0.96 m3.
Surface water drainage charge	0.7p per £ of gross rateable value (GRV)

Table 13.11: North of Scotland Water Authority non-domestic water charges

Meter size	Annual standing charge
Up to 25 mm	£74
40 mm	£88
50 mm	£101
80–100 mm	£137
150 mm or over	£205

Table 13.12: North of Scotland Water Authority volumetric water charges

Tariff Type	Price
Tariff up to 100,000 m3 per year	£1.0410 per m3 of water supplied
Tariff from 100,000 m3 to 250,000 m3 per year	£0.8849 per m3 of water supplied
Tariff over 250,000 m3 per year	£0.7287 per m3 of water supplied
Unmeasured non-household water supply charges	Tayside 8.6p per £ of rateable value All other areas 9.76p per £ of rateable value

Table 13.13: North of Scotland Water Authority non-domestic waste water charges

Volumetric charges	
Volume charge	£0.3079 m3
Surface water drainage charge	£0.0793 per £ of rateable value
Unmeasured non-household waste water service charges	9.61p per £ of rateable value

Table 13.14: West of Scotland Water Authority non-domestic water charges

Meter size	Network charge	Customer service charge	Combined annual charge
Up to 20 mm	£57	£43	£100
25 mm	£228	£119	£347
40 mm	£513	£247	£760
50 mm	£913	£426	£1,339
80 mm	£2,054	£936	£2,990
100 mm	£3,651	£1,651	£5,302
150 mm	£8,215	£3,694	£11,909
200 mm	£14,604	£6,554	£21,158
250 mm	£18,495	£8,291	£26,786
300 mm	£32,859	£14,726	£47,585

Table 13.15: West of Scotland Water Authority volumetric water charges

Tariff Type	Price
Tariff up to 100,000 m3 per year	£0.5403 per m3 of water supplied
Tariff from 100,000 m3 to 250,000 m3 per year	£0.4863 per m3 of water supplied
Tariff over 250,000 m3 per year	£0.4593 per m3 of water supplied
Unmeasured non-household water supply charges	5.08p per £ of water rateable value

e) Segmentation of non-domestic customers

The 180,000 non-domestic customers across Scotland can be segmented further into small, medium and large customers according to water used and the level of charges paid to the water and sewerage authority. Non-domestic customers range from small businesses such as newsagents to very large users such as petrochemical manufacturers and food processors. The largest users depend upon huge amounts of water for production purposes. I have defined large users¹ as those whose consumption is greater than 100,000 m³ per year or £100,000 per year in total water and waste water charges. This could include single or multi-site customers in both the public and private sector.

In March 2001, there were 344 large users across Scotland, 107 in the North, 84 in the East, and 153 in the West. It is worth noting that the number of large users in the North results partly from the relatively high level of charges for North of Scotland Water Authority compared with the other two authorities.

¹ The industry standard definition in the UK of a large user has been a user of over 100,000 m³ of water on a single site. Analysis showed that in Scotland there was a need to expand the definition because of the importance of multi-site customers.

Table 13.16: West of Scotland Water Authority non-domestic waste water charges

Meter size	Network charge	Meter size	Network charge
Up to 20 mm	£20	100 mm	£1,280
25 mm	£80	150 mm	£2,880
40 mm	£180	200 mm	£5,120
50 mm	£320	250 mm	£6,480
80 mm	£720	300 mm	£11,520

Table 13.17: West of Scotland Water Authority volumetric waste water charges

Volume charge	£0.5395 per m ³ of wastewater returned
Rateable value charge	3.86 p per £ of rateable value (rainwater disposal services paid on unmeasured basis), or 3.37 p per £ of rateable value (rainwater disposal service paid on measured basis)
Measured property rainwater charge	£100 per 10 m ² of drained area
Unmeasured non-household waste water service charges	7.05p per £ of rateable value

Table 13.18 illustrates the relative importance of large users in each of the three water authorities.

The authorities have recently begun to offer a discount to the largest single-site users of water. This discount is common practice across the UK. Companies or organisations that use over 100,000m³ of water on a single site each year qualify for this discount.

Table 13.19 illustrates the importance of these large users in each authority area.

The East of Scotland Water Authority (and to a lesser extent the West of Scotland Water Authority) depends on a limited number of industrial sectors for its non-domestic income. Tables 13.20-13.22 below show the relative importance of sectors to the single site large user income, large user income in general and non-domestic income.

Table 13.18: Split of non-domestic customer revenue – large users and small/medium users

Primary revenue in 2000–01	East	%	North	%	West	%	Total	%
Large users	£48.5m	54%	£35.8m	41%	£59.4m	46%	£143.7m	47%
Small – medium users	£40.6m	46%	£50.5m	59%	£69.7m	54%	£160.8m	53%
Non-domestic total	£89.1m	100%	£86.3m	100%	£129.1m	100%	£304.5m	100%

Table 13.19: Split of non-domestic customer revenue – single sites, other large users, small/medium users

Primary revenue in 2000–01	East	%	North	%	West	%	Total	%
Single site large users	£17.8m	20%	£5.4m	15%	£15.2m	14%	£38.4m	13%
Other large users	£30.7m	34%	£30.4m	26%	£44.2m	32%	£105.3m	35%
Small – medium users	£40.6m	46%	£50.5m	59%	£69.7m	54%	£160.8m	53%
Non-domestic total	£89.1m	100%	£86.3m	100%	£129.1m	100%	£304.5m	100%

Table 13.20: Revenue from single-site large users

Single-site large user	East		North		West	
	Revenue	%	Revenue	%	Revenue	%
Retail	£0.0m	0%	£0.0m	0%	£0.0m	0%
Public Sector	£0.2m	1%	£0.0m	0%	£0.0m	0%
Commercial	£0.0m	0%	£0.5m	9%	£0.0m	0%
Manufacturing	£0.8m	4%	£0.3m	6%	£2.8m	18%
Services	£0.0m	0%	£0.2m	4%	£0.0m	0%
Petrochemicals	£11.8m	66%	£1.4m	26%	£4.5m	29%
Food Manufacture	£0.0m	0%	£1.5m	28%	£1.4m	9%
Utilities	£0.2m	1%	£0.9m	17%	£0.0m	0%
Drinks/Breweries	£1.1m	6%	£0.3m	6%	£2.2m	14%
Hi-Tech Manufacture	£2.5m	14%	£0.0m	0%	£2.2m	14%
Voluntary Sector	£0.0m	0%	£0.0m	0%	£0.0m	0%
Pharmaceuticals	£1.2m	7%	£0.2m	4%	£1.8m	12%
Textiles Manufacture	£0.0m	0%	£0.1m	2%	£0.3m	2%
Agricultural	£0.0m	0%	£0.0m	0%	£0.0m	0%
Totals (rounded)	£17.8m	100%	£5.4m	100%	£15.2m	100%

A significant percentage of East's total revenue from large users comes from single-site users (37%). This is largely attributable to the petrochemical sector. Petrochemical companies are also the largest single-site users in the West, where single-site revenue accounts for 26% of large user

income. In the North, only 15% of large user income comes from single sites. Retail and the public sector account for between 46% of large user revenue in the East to 50% in the North. Again, the significance of the petrochemical sector is obvious in the East.

Table 13.21: Revenue from large users

Large users	East		North		West	
	Revenue	%	Revenue	%	Revenue	%
Retail	£8.9m	18%	£3.9m	11%	£6.3m	11%
Public Sector	£13.4m	28%	£17.1m	48%	£21.8m	37%
Commercial	£1.4m	3%	£2.2m	6%	£2.5m	4%
Manufacturing	£1.2m	2%	£1.4m	4%	£4.0m	7%
Services	£2.0m	4%	£1.2m	3%	£1.3m	2%
Petrochemicals	£11.9m	25%	£3.1m	9%	£5.2m	9%
Food Manufacture	£1.1m	2%	£2.1m	6%	£2.9m	5%
Utilities	£2.8m	6%	£3.2m	9%	£4.5m	8%
Drinks/Breweries	£1.6m	3%	£1.0m	3%	£5.3m	9%
Hi-Tech Manufacture	£2.8m	6%	£0.1m	0%	£3.3m	6%
Voluntary Sector	£0.0m	0%	£0.0m	0%	£0.0m	0%
Pharmaceuticals	£1.2m	3%	£0.2m	1%	£1.8m	3%
Textiles Manufacture	£0.2m	0%	£0.3m	1%	£0.7m	1%
Agricultural	£0.0m	0%	£0.0m	0%	£0.0m	0%
Totals (rounded)	£48.5m	100%	£35.8m	100%	£59.4m	100%

Table 13.22: Revenue from non-domestic sector

Non-domestic sector	East		North		West	
	Revenue	%	Revenue	%	Revenue	%
Retail	£29.9m	34%	£17.5m	20%	£21.3m	16%
Public Sector	£17.2m	19%	£20.2m	24%	£24.0m	19%
Commercial	£5.4m	6%	£8.8m	10%	£23.1m	18%
Manufacturing	£3.9m	4%	£9.8m	11%	£11.9m	9%
Services	£4.7m	5%	£10.7m	12%	£10.0m	8%
Petrochemicals	£12.0m	14%	£3.7m	4%	£5.6m	4%
Food Manufacture	£1.6m	2%	£4.8m	6%	£12.0m	9%
Utilities	£3.7m	4%	£5.3m	6%	£5.5m	4%
Drinks/Breweries	£2.2m	2%	£1.4m	2%	£5.7m	4%
Hi-Tech Manufacture	£3.8m	4%	£0.3m	0%	£4.0m	3%
Voluntary Sector	£2.1m	2%	£2.2m	3%	£2.7m	2%
Pharmaceuticals	£1.2m	1%	£0.3m	0%	£1.8m	1%
Textiles Manufacture	£0.6m	1%	£0.7m	1%	£1.5m	1%
Agricultural	£0.8m	1%	£0.6m	1%	£0.0m	0%
Totals (rounded)	£89.1m	100%	£86.3m	100%	£129.1m	100%

In terms of total non-domestic revenue, the importance of public sector and retail income becomes even more apparent. In the East, 53% of total non-domestic income comes from these two sectors, in the North 44% and in the West 35%.

The creation of the proposed Scottish Water will significantly reduce the exposure of each of the water authorities to any

single sector of the economy. This will reduce the risk to the authority of a dominant customer being able to dictate terms. This will, therefore, be in the general customer interest. Table 13.23 below illustrates the most important sectors from the perspective of the proposed Scottish Water.

Table 13.23: Total revenue from non-domestic sector

Non-domestic	Over £100,000		To £100,000		Total	
	£m	%	£m	%	£m	%
Retail	£19.1m	14%	£49.6m	31%	£68.7m	23%
Public Sector	£52.3m	39%	£9.1m	6%	£61.4m	20%
Commercial	£6.1m	5%	£31.2m	19%	£37.3	12%
Manufacturing	£6.6m	5%	£19.0m	12%	£25.6m	8%
Services	£4.5m	3%	£20.9m	13%	£25.4m	8%
Petrochemicals	£20.2m	14%	£1.1m	1%	£18.4	7%
Food Manufacture	£6.1m	4%	£12.3m	8%	£14.5	6%
Utilities	£10.5m	7%	£4.0m	2%	£9.3m	5%
Drinks/Breweries	£7.9m	6%	£1.4m	1%	£8.1m	3%
Hi-Tech Manufacture	£6.2m	4%	£1.9m	1%	£7m	3%
Voluntary Sector	£0.0m	0%	£7m	4%	£3.3m	2%
Pharmaceuticals	£3.2m	2%	£0.1m	0%	£2.3m	1%
Textiles Manufacture	£1.2m	1%	£1.6m	1%	£2.8m	1%
Agricultural	£0.0m	0%	£1.4m	1%	£1.4m	0%
Totals (rounded)	£143.7m	100%	£160.6m	100%	£304.5m	100%

The public sector is a very important group of customers. It accounts for nearly 40% of large user revenues. Petrochemical and retail each account for a further 14%. These three sectors account for over 50% of all (not just large user) non-domestic income.

f) Typical amounts paid by non-domestic customers

The Charges Schemes for each authority show some quite

marked differences. I have tried to illustrate what this means for some typical businesses ranging from a small newsagent to a whisky distiller, where the charges are on a measured basis. The water usage of one employee is around 25 litres per day, or 10m³ per annum. Trade effluent charges have not been included since I have no role in agreeing either their method of collection or their amount.

Table 13.24: Typical water bills paid by non-domestic customers

Property ²	Water Volume 2001–02	Water Authority	Income from Standing Charge	Income from Volumetric Charge	Total
Newsagent	30m ³	East	£6	£18	£24
		North	£74	£31	£105
		West	£100	£16	£116
Local garage	100m ³	East	£43	£61	£104
		North	£74	£104	£178
		West	£100	£54	£154
Restaurant	500m ³	East	£100	£305	£405
		North	£74	£521	£595
		West	£100	£270	£370
Commercial	900m ³	East	£240	£549	£789
		North	£74	£937	£1,011
		West	£347	£486	£833
Retail (20 small stores)	4,500m ³	East	£5,670	£2,745	£8,415
		North	£1,716	£4,685	£6,401
		West	£7,900	£2,431	£10,331
Food Manufacturers (3 meters)	50,000m ³	East	£4,780	£30,500	£35,280
		North	£285	£52,050	£52,335
		West	£3,684	£27,015	£30,699
Food Manufacturers (4 meters)	100,000m ³	East	£11,055	£61,000	£72,055
		North	£386	£104,100	£104,486
		West	£7,335	£54,030	£61,365
Manufacturing	175,000m ³	East	£26,500	£102,175	£128,675
		North	£205	£170,468	£170,673
		West	£11,909	£90,503	£102,412
Drinks / Brewers (4 meters)	600,000m ³	East	£36,080	£324,825	£360,905
		North	£490	£491,880	£492,370
		West	£17,905	£287,730	£305,635

² It is assumed that 1 employee uses around 27 litres of water per day, or 10m³ per annum, except where water is used in the business process. Therefore, the newsagent has 3 employees and the commercial building 90 employees.

East of Scotland Water Authority has the lowest water bill for customers who do not use much water. This is a direct result of the very low standing charge that it applies to small meters. The standing charges for East of Scotland Water Authority increase quite sharply however, with the result that its prices increase faster than those for customers in the West. At low water volumes, North of Scotland Water Authority bills for water are lower than for West of Scotland Water Authority. This reflects the lower standing charge for North of Scotland Water Authority. The authority does have a very high volumetric charge for water and this more than offsets the advantage of the lower standing charges for the large user of water.

East of Scotland Water Authority again has the lowest sewerage bills for those who are modest users of water⁴. In this instance, the low charge is principally a result of the much lower surface water drainage charges in the East. In contrast, the relatively high volumetric charge of East of Scotland Water Authority more than outweighs the company's lower surface drainage charges for the larger water user. The East actually has the highest waste water bills in Scotland for large users.

Table 13.25: Typical wastewater bills paid by non-domestic customers

Property	Waste water ³ volume	Rateable value	Water authority	Income from standing charge	Income from volumetric charge	Income from surface water charge	Total
Newsagent	28.5m ³	£5,000	East	£10	£27	£35	£72
			North	–	£9	£397	£405
			West	£20	£15	£193	£228
Local garage	95m ³	£10,000	East	£80	£91	£70	£241
			North	–	£29	£793	£822
			West	£20	£51	£386	£457
Restaurant	475m ³	£100,000	East	£190	£456	£700	£1,346
			North	–	£146	£7,930	£8,076
			West	£20	£256	£3,860	£4,136
Commercial	855m ³	£750,000	East	£450	£821	£5,250	£6,521
			North	–	£263	£59,475	£59,738
			West	£80	£461	£28,950	£29,491
Retail	4,275m ³	£1,700,000	East	£10,630	£4,104	£11,900	£26,634
			North	–	£1,316	£134,810	£136,126
			West	£1,820	£2,306	£65,620	£69,746
Food Manufacturers	47,500m ³	£100,000	East	£8,900	£45,600	£700	£55,200
			North	–	£14,625	£7,930	£22,555
			West	£880	£25,626	£3,860	£30,366
Food Manufacturers	95,000m ³	£260,000	East	£20,760	£91,200	£1,820	£113,780
			North	–	£29,251	£20,618	£49,869
			West	£1,760	£51,253	£10,036	£63,049
Manufacturing	166,250m ³	£1,225,000	East	£49,600	£159,600	£8,575	£217,775
			North	–	£51,188	£97,143	£148,331
			West	£2,880	£89,692	£47,285	£139,857
Drinks / Brewers	150,000m ³	£500,000	East	£67,600	£144,000	£3,500	£215,100
			North	–	£46,185	£39,650	£85,835
			West	£4,320	£80,925	£19,300	£104,545

³ Based on 2001-02 financial year.

⁴ Sewerage charges are based on an assessment of water use. It is normally estimated that 95% of water used is returned to sewer.

North of Scotland Water Authority is currently transitioning to an assessed volume charge for sewerage. At the current time, the current surface water drainage charge includes both a foul water element and a surface water drainage element. This method of charging penalises those who are lower users of water but have a high rateable value (city centre premises). It will benefit those on a lower rateable value who use a lot of water. The large customers in the West of Scotland have the best deal. Elsewhere, West customers do worse than in the East but better than in the North.

g) Implications of Scottish Water

The creation of Scottish Water would bring the immediate advantage of reducing the exposure of the organisation to any

single customer or group of customers. A second advantage, which would result over the next few years, is that charges would become harmonised across Scotland.

i) Domestic customers

A move to a harmonised charge would remove some of the current discrepancies in charging levels and policies. There are obvious inequities in the existing system. Households in the Borders pay more than in Dumfriesshire. In North Fife (where the costs of supplying water are quite high), charges are significantly below those in Dundee, where the costs of supply are much lower.

Many multi-site non-domestic customers have expressed concern about the extreme variations in charges that exist between the three authority areas⁵. Understandably, domestic

Table 13.26: Typical total bills paid by non-domestic customers

Property	Water authority	Total water	Total waste water	Total	Impact of using charging schemes of:		
					East	North	West
Newsagent	East	£24	£72	£96	0%	574%	359%
	North	£105	£405	£511	(60%)	0%	(33%)
	West	£116	£228	£345	(41%)	48%	0%
Local garage	East	£104	£241	£345	0%	190%	77%
	North	£178	£822	£1,000	(65%)	0%	(39%)
	West	£154	£457	£611	(44%)	64%	0%
Restaurant	East	£405	£1,346	£1,751	0%	731%	315%
	North	£595	£8,076	£8,671	(88%)	0%	(50%)
	West	£370	£4,136	£4,506	(76%)	100%	0%
Commercial	East	£789	£6,521	£7,310	0%	395%	157%
	North	£1,011	£59,738	£60,749	(80%)	0%	(48%)
	West	£833	£29,491	£30,325	(61%)	92%	0%
Retail	East	£8,415	£26,634	£35,049	0%	312%	128%
	North	£6,401	£136,126	£142,527	(75%)	0%	(44%)
	West	£10,331	£69,746	£80,078	(56%)	80%	0%
Food Manufacturers	East	£35,280	£55,200	£90,480	0%	(17%)	(33%)
	North	£52,335	£22,555	£74,890	21%	0%	(18%)
	West	£30,699	£30,366	£61,065	48%	23%	0%
Food Manufacturers	East	£72,055	£113,780	£185,835	0%	(17%)	(33%)
	North	£104,486	£49,869	£154,355	20%	0%	(19%)
	West	£61,365	£63,049	£124,414	49%	24%	0%
Manufacturing	East	£128,675	£217,775	£346,450	0%	(8%)	(30%)
	North	£170,673	£148,331	£319,003	9%	0%	(24%)
	West	£102,412	£139,857	£242,268	43%	32%	0%
Drinks / Brewers	East	£360,905	£215,100	£576,005	0%	0%	(29%)
	North	£492,370	£85,835	£578,205	(0%)	0%	(29%)
	West	£305,635	£104,545	£410,180	40%	41%	0%

⁵ This concern has been expressed by Chambers of Commerce and small business owners who have sites in more than one authority area.

customers in the North of Scotland are dissatisfied at the higher charge levels that they face.

Customers in the different authority areas will see quite different increases in their charges as a result of the move to harmonise charges. Increases for domestic customers in the West and East areas will be higher than the overall revenue cap⁶. The harmonisation of charges can be achieved in year three (2004-05) of the four-year regulatory period. This will ease the impact of harmonisation on those who will end up paying more.

Table 13.27 illustrates my estimate of the impact on the Band D charge in each of the three authority areas as a result of harmonisation of charges. The table takes account of the additional revenue that I believe will need to come from the domestic sector. It also assumes that the balance between water and sewerage charges moves over this review period to reflect the average position in England and Wales. This is appropriate, as the majority of customers will begin to benefit from full secondary treatment of sewage during this period.

Table 13.27: Band D Charge – Impact of harmonisation

2001–02 Band D charge	East	North	West
Water	£124.50	£192.63	£138.87
Sewerage	£145.50	£157.55	£127.53
Total	£270.00	£350.18	£266.40
2004–05 Projected Harmonisation			
Water	c.£160	c.£160	c.£160
Sewerage	c.£183	c.£183	c.£183
2004–05 Band D charge nationally	c.£343	c.£343	c.£343

In 2004-05, harmonised domestic charges would be approximately £343 in total per Band D household. This compares with the current Band D charge in the East of £270.00; in the West of £266.40 and in the North of £350.18.

ii) Non-domestic customers

The mix of services used by businesses can vary quite significantly. In order to try to show what harmonisation might mean, I set out below some illustrative examples. The actual

impact on any particular business will no doubt differ from this example, but in the event that the proposed Scottish Water seeks to develop tariffs that are broadly reflective of economic costs, my examples should be directionally correct. It will, of course, be for management to determine the actual method and speed of harmonisation.

I have made the following assumptions:

- I have applied the East of Scotland Water Authority standing charges to water and waste water for each business except the newsagent. These are the highest of the three authorities and the higher standing charge more accurately reflects the costs of supply to each customer. I have applied the standing charges of the West of Scotland Water Authority to the newsagent, due to the very small standing charges applied by the East to small businesses.
- I have applied the East of Scotland Water Authority volumetric charge to water. This is neither the highest nor the lowest volumetric charge.
- I have applied the West of Scotland Water Authority volumetric and surface water charges for waste water. Again, this is neither the highest nor the lowest charge.

In harmonising the tariffs, I have taken no account of increases in charges. Table 13.28 indicates the difference between the sample 2005-06 bill after harmonisation and the current 2001-02 bill of the three authorities. A figure in brackets indicates a reduction to the customer's bill.

With harmonisation there will always be winners and losers. In my example those who benefit are:

- water customers in the North (except those with very low usage and a large number of metered sites),
- low water users in the West,
- large waste water customers in the North.

Those who would lose out are:

- large water users in the West,
- waste water customers in the East.
- very small premises in the East.

⁶ In Chapter 37, I discuss the outlook for prices in the East and West areas in the event that the Scottish Parliament does not endorse Scottish Water. My expectation would be that the existing authorities would find the efficiency targets much more difficult to achieve than will Scottish Water. This means that customers in the West and in the East will actually be better off under the Scottish Water proposal than they would have been under the existing arrangement.

Table 13.28: Examples of what harmonisation might mean – increase/(decrease) in 2001–02 bills

Property	Water volume	Rateable value (£)	Water authority	Water	Waste water	Total
Newsagent	30m ³	£5,000	East	£94	£156	£250
			North	£13	(£177)	(£164)
			West	£2	£0	£2
Local garage	100m ³	£10,000	East	£0	£276	£276
			North	(£74)	(£305)	(£379)
			West	(£50)	£60	£10
Restaurant	500m ³	£100,000	East	£0	£2,960	£2,960
			North	(£190)	(£3,770)	(£3,959)
			West	£35	£170	£205
Commercial	900m ³	£750,000	East	£0	£23,340	£23,340
			North	(£222)	(£29,877)	(£30,099)
			West	(£44)	£370	£326
Retail	4500m ³	£1,700,000	East	£0	£51,922	£51,922
			North	£2015	(£57,570)	(£55,555)
			West	(£1,916)	£8,810	£6,894
Food Manufacturers	50,000m ³	£100,000	East	£0	(£16,814)	(£16,814)
			North	(£17,055)	£15,831	(£1,224)
			West	£4,581	£8,020	£12,601
Food Manufacturers	100,000m ³	£260,000	East	£0	(£31,732)	(£31,732)
			North	(£32,431)	£32,180	(£251)
			West	£10,690	£19,000	£29,690
Manufacturing	175,000m ³	£1,225,000	East	£0	(£31,198)	(£31,198)
			North	(£41,998)	£38,246	(£3,752)
			West	£26,264	£46,720	£72,984
Drinks/Brewer	600,000m ³	£500,000	East	£0	(£47,275)	(£47,275)
			North	(£131,465)	£81,990	(£49,475)
			West	£55,270	£63,280	£118,550

h) Implications of current pricing structures

There are a number of challenges facing the industry in Scotland in respect of harmonising charges, and ensuring that these charges are cost reflective. My analysis highlights that there will be customers who benefit from harmonisation, but there will also be some customers who are worse off. The key is that those who are worse off are not asked to pay a price significantly in excess of the costs of supply. However this analysis does not address two other important issues implicit in the current pricing structures. These are the balance between metered and un-metered revenues and secondly, the relative prices and costs of supply of small businesses and households. Both of these issues have implications for revenue, which I have attempted to quantify.

i) Metered and un-metered

The switch to metering has resulted in a significant reduction in the non-domestic customer chargeable base of the water authorities. The impact in the East of Scotland Water Authority is estimated at 14% in 2001-02 and 20% the previous year (assuming a 10% price increase in both years). West of Scotland Water Authority, which is less further forward in its metering programme, estimated the reduction in the customer chargeable base in 2001-02 at 8% (assuming a 10% price increase).

The price elasticity of demand for water is increased when there is a large volumetric element in the charging for the supply of water. Essentially, customers can reduce their bill by reducing their consumption of water. This does not reflect the

Table 13.29: Split of water revenues – metered and un-metered

Non-Domestic water revenues £ms	East		North		West		Scotland	
Metered	£46.5m	100%	£30.1m	83%	£41.1m	80%	£117.7m	88%
Non-metered	n/a	0%	£6.0m	17%	£10.3m	20%	£16.3m	12%
Non-domestic water total	£46.5m	100%	£36.1m	100%	£51.4m	100%	£134.0m	100%

Table 13.30: Split of waste water revenues – metered and un-metered

Non-Domestic waste water revenues £ms	East		North		West		Scotland	
Metered	£42.6m	100%	£34.3m	68%	£15.6m	20%	£92.5m	54%
Non-metered	N/a		£15.9m	32%	£62.1m	80%	£78.0m	46%
Non-domestic waste water total	£42.6m	100%	£50.2m	100%	£77.7m	100%	£170.5m	100%

costs of supply as the actual costs depend to only a very limited extent on the amount of water supplied. The largest element of cost relates to the cost of access to the networks. If costs are properly allocated and tariffs are broadly reflective of costs then this decline in the chargeable base should be halted and may in some cases be reversed.

Most water is already supplied on a metered basis so the scope for further erosion of the chargeable base should be significantly reduced. It would further seem likely that most customers who felt that they would benefit from installing a meter have already switched.

Table 13.29 illustrates the split of non-domestic water revenues between metered and un-metered customers. 88% of non-domestic water customers are already metered. Even if there is a further decline in the chargeable base as a result of switching to meters, this is likely to have only a very marginal impact on revenue. I would estimate that this risk is not likely to be more than about £3 million.

The percentage of metered waste water revenues is significantly lower than for water. In particular, only 20% of non-domestic revenue in the West is metered. I estimate that the maximum revenue impact could reach 20% of the 46% of the unmetered revenues. This equates to £16 million. The extent of the risk to revenue in both water and waste water can be substantially limited by the introduction of higher standing charges. This is in the general customer interest.

The introduction of broadly cost reflective charges can limit and perhaps in some cases reverse the declines in the chargeable base that have been experienced in the last few years. It is important that customer charges broadly reflect their use of the system. In particular it should be remembered that use of the system does not mean only water use, it also includes the benefits provided simply by having the connection to the water and sewerage system.

ii) Small business charges

Tables 13.31-13.33 illustrate the small business charges for water in each of the three authority areas.

Table 13.31: East of Scotland Water Authority

Water Volume/ Meter Size	6mm ⁷	8mm	10mm
20m ³	£18.20		
60m ³		£48.60	
120m ³			£94.20

Table 13.32: North of Scotland Water Authority

Water Volume/ Meter Size	Up to 25mm
20m ³	£94.82
60m ³	£136.46
90m ³	£167.69
120m ³	£198.92

⁷ East of Scotland Water Authority applies a theoretical meter size calculation. The meter sizes of 6mm, 8mm and 10mm are compatible with the volumes used in my example, according to the East of Scotland Water Authority Schedule of Charges 2001/02, Appendix B.

Table 13.33: West of Scotland Water Authority

Water Volume/ Meter Size	20mm	25mm
20m ³	£110.81	£357.81
60m ³	£132.42	£379.42
90m ³	£148.63	£395.63
120m ³	£164.84	£411.84

Charges for small businesses are typically less than those paid by households. This does not reflect the economics of supply. It will be important to explain to the small business community why their charges are likely to have to increase.

i) The impact of competition

The previous chapter outlined the potential development of competition in the Scottish water industry. I believe that in the market competition (i.e. real choice for customers) will develop only in the retail component of the value chain. If the Scottish industry approaches the efficiency frontier and designs tariffs that broadly reflect costs, then the risk to revenue in a network and treatment business should be limited.

There is, however, a greater risk to revenue in the retail activity. There are two main reasons for this. The first is that there is a significant problem with non-payment in Scotland. The second is the potential growth in bundled services.

Bad debt in Scotland is partly caused by poor billing and management of receivables by the authorities; partly by some domestic customers choosing not to pay; and partly by customers who have a genuine problem affording their water bill (I will discuss this in more detail in Chapter 24).

There is an increasing number of retail-focussed businesses offering utility services. This includes companies like Centrica, Powergen and Innogy. Each of these companies offers electricity, gas and telephone services. These product offers are being expanded to include financial and other household services. They offer the convenience of a single bill and single point of contact. There would seem to be some evidence that customers are on occasion prepared to pay a little more for this extra convenience.

Potential entry to the Scottish retail market will be made easier by the high level of non-collection of charges in Scotland. New

entrants are likely to be able to offer services primarily to those who will pay. This would inevitably mean that they will be lower cost and these benefits could be passed on to the customer in the form of lower charges.

New entrants to the Scottish market may also be able to benefit from economies of scale and of scope in the provision of a retail service. Again, these cost benefits could be passed on to customers in lower prices. They may also be able to offer a more convenient service to customers with a 'bundled bill'.

I need to understand the potential impact of retail competition on the revenues of the existing water authorities. The discounts available to customers for switching gas or electricity supplier suggest that the revenue of the water industry could be materially affected. My approach was to gather information from the water authorities on the costs incurred in providing a retail service. I compared these costs to the spending of the privatised companies in England and Wales. I have concluded that the threat to revenue is real (largely because of the non-payment problem), but that the impact of this on the overall funding of the industry is not great.

The information I requested covered all aspects of the retail function. I asked for information on costs associated with:

- customer billing,
- meter reading,
- call centre services,
- key account management,
- debt recovery
- bad debt.

The responses from the water authorities are outlined in Table 13.34.

Table 13.34: Costs of the retail function, across the three authorities 2000–01

Retail supply function	Domestic operating costs	Non-domestic operating costs	Total
Billing	£0.4m	£3.5m	£3.9m
Call centre	£1.3m	£0.6m	£1.9m
Meter reading	£0m	£1.5m	£1.5m
Key account management	£0m	£1.6m	£1.6m
Debt recovery	£8.3m	£5.2m	£13.5m
Bad debt	£25.5m	£16.0m	£41.5m
Local authority charge for billing & collection	£11.5m	£0m	£11.5m
Total	£47.0m	£28.4m	£75.4m

The water authorities were not able to produce detailed capital costs for the retail function. I have assumed for this analysis that the annual depreciation charge on capital in Scotland is £25 million. Earning the average return on retail assets would add a further £8.5 million per year. The total costs of the retail business are £100.4 million annually. The total revenue that it is appropriate to allocate to the retail business is £108.9 million.

Table 13.35 shows the proportion of retail operating costs compared with total operating costs.

Retail costs appear to represent around 18% of total water authority operating costs. This is a higher percentage than in the comparator companies in England and Wales, as shown in Table 13.36.⁸

NB: South West Water data is for 1999-00, as 2000-01 accounts were not available at the time of writing.

There are two main reasons why retail costs represent a high percentage of total operating costs:

- high bad debt levels
- comparative inefficiency

Accordingly, I have made adjustments to the total retail costs of £75.4 million for each of these in turn.

A large proportion of the costs incurred in the retail function result from the non-collection of revenue. Bad debt accounts for £41.5 million, which is 55% of total retail operating costs. The total bad debt charge across Scotland is 5.5% of revenue.

Table 13.35: Split of retail and non-retail costs

2000–01 water authority operating cost	Domestic		Non-domestic		Total	
	£	%	£	%	£	%
Retail	£47.0m	14.3%	£28.4m	16.8%	£75.4m	18%
Non-retail	£234.7m	85.7%	£112.9m	83.2%	£347.6m	82%
Total	£281.7m	100%	£141.3m	100%	£423.0m	100%

Table 13.36: Comparison of Scottish Water compared with companies in England and Wales

2000–01 Operating cost	Scottish Water		Yorkshire Water		Northumbrian Water		South West Water	
	£	%	£	%	£	%	£	%
Retail	£75.4m	18%	£25.3m	12%	£25.9m	14%	£8.3m	9%
Non-retail	£347.6m	82%	£193.9m	88%	£155.3m	86%	£79.7m	91%
Total	£423.0m	100%	£219.2m	100%	£181.2m	100%	£88.0m	100%

⁸ NB: South West Water data is for 1999-00, as 2000-01 accounts were not available at the time of writing.

If this charge were to be reduced to the average level in England and Wales, the operating costs incurred in retail function would be reduced by 39%. This has been weighted 60%/40% between the domestic and non-domestic sector to reflect the approximate split of bad debt in Scotland.

Table 13.37: Adjustment to retail operating costs for reduced bad debt

	Domestic	Non-domestic	Total
Retail operating cost	£47.0m	£28.4m	£75.4m
Bad debt reduction	£17.6m	£11.8m	£29.4m

It has also been discussed in Chapter 24 that the water authorities are around 50% less efficient than the average in England and Wales. As the bad debt levels will form a significant part of this inefficiency and have already been adjusted for, I have stripped out bad debt and calculated an inefficiency adjustment of 35% of the balance.

Table 13.38: Adjustment to retail operating costs for inefficiency

	Domestic	Non-domestic	Total
Retail operating cost	£47.0m	£28.4m	£75.4m
Deduct bad debt	(£24.9m)	(£16.6m)	(£41.5m)
Total	£22.1m	£11.8m	£33.9m
Inefficiency adjustment	£7.7m	£4.1m	£11.8m

Therefore, if the water authorities were as efficient as the companies in England and Wales the retail operating costs would be as shown in Table 13.39.

Table 13.39: Retail operating costs adjusted for inefficiency and reduced bad debt

Water authority retail operating costs	£75.4m
Bad debt reduction	(£29.4m)
Inefficiency adjustment	(£11.8m)
Revised retail operating costs	£34.2m

A further adjustment is required as a greater level of customer service is provided in England and Wales for the monies spent. To enhance service levels will require significant additional expenditure in the Water Authorities. I have estimated the increased costs required at one-third, after stripping out bad debt. This is outlined in Table 13.40.

Table 13.40: Cost of increasing customer service levels

Water authority retail operating costs	£75.4m
Deduct bad debt	(£41.5m)
Total	£33.9m
Cost of increase in service levels (33%)	£11.3m

Table 13.41 shows that the retail operating costs following the customer service level adjustment would be around £45.5 million.

Table 13.41: Retail operating costs with allowance for increased service

Water authority retail operating costs	£75.4m
Retail operating cost (with reduced bad debt and inefficiency adjustment)	£34.2m
Increase in service levels	£11.3m
Total	£45.5m

Therefore, if the water authorities were operating as efficiently and effectively as the companies in England and Wales the retail operating costs would be £45.5 million. However, if they continue to operate inefficiently and with high bad debt levels then the retail operating costs would be £90.7 million, as shown in Table 13.42.

Table 13.42: Retail operating cost at current level of efficiency and bad debt

Retail operating cost	£75.4m
Increase in service levels	£11.3m
Inefficiency in service level adjustment	£4.0m
Total	£90.7m

The relative competitive position of the Scottish industry becomes clearer if we look at all costs as a proportion of revenue. There is no information about the capital equipment used by the privatised companies. I have therefore made the assumption that they too use £100 million of capital, which is depreciated over four years. This assumption penalises Northumbrian Water and South West Water because they are smaller organisations and there will be economies of scale in the billing systems used. I have included their actual cost of capital, which is 6.8% nominal, and the required return is therefore equal to £6.8 million per year. I have included two scenarios for the proposed Scottish Water. The minimum scenario outlines the position where the authorities are at the

Table 13.43: Retail revenue as a percentage of total revenue

2000–01	Scottish Water (minimum)	Scottish Water (maximum)	Yorkshire Water	Northumbrian Water	South West Water
Retail operating costs	£45.5m	£90.7m	£25.3m	£25.9m	£8.3m
Depreciation	£25m	£25m	£25m	£25m	£25m
Return on capital	£8.5m	£8.5m	£6.8m	£6.8m	£6.8m
Total retail revenue required	£79.0m	£124.2m	£57.1m	£57.7m	£40.1m
Total revenue	£746.3m	£746.3m	£543.6m	£405.1m	£243.4m
% of revenue	10.6%	16.7%	10.5%	14.2%	16.5%

same levels of efficiency as their comparators, with reduced bad debt and higher service levels. The maximum scenario is where the Authorities are operating at current levels of efficiency and bad debt, but with higher service levels to enable a valid comparison with England and Wales.

My analysis would suggest that unless bad debt and inefficiency are addressed, a new entrant could benefit from an additional margin of some £45 million. If I assume that 60% of cost is attributable to domestic customers, then the potential average discount, which a new entrant could offer to domestic customers of the water authorities is £12.

It is likely that retail-focused companies with economies of scale and scope such as Centrica, Powergen and Innogy could achieve larger margins than this if they entered the Scottish market. This results from the economies of scope and scale from which they would benefit.

j) Potential revenue impact of competition

In Chapter 12, I discussed the loss of market share that was experienced by British Gas in the years after the market was liberalised. If the proposed Scottish Water were to experience the same percentage reduction in its retail business as was experienced by British Gas from 1993 onwards in the commercial/industrial sector, then retail revenue would decline as shown in Table 13.44.

Table 13.44: Potential decline in retail revenue (commercial/industrial)

Year	Decline on prior year	Cumulative decline
Year One	23%	23%
Year Two	34%	49%
Year Three	19%	59%
Year Four	20%	67%

The loss of market share of domestic customers has not been as rapid since liberalisation of the domestic market in 1997-98. By February 1999, 21.7% of domestic customers had switched. I have assumed that the rate of decline continues as follows:

Table 13.45: Potential decline in retail revenue (domestic)

Year	Decline on prior year	Cumulative decline
Year One	11%	11%
Year Two	12%	22%
Year Three	10%	30%
Year Four	10%	37%

In order to calculate the overall decline in retail revenue I have applied a weighting of 60% to domestic customers and 40% to the commercial/industrial sector. The results are shown in the table below.

Table 13.46: Potential decline in retail revenue (commercial/industrial and domestic)

Year	Decline on prior year	Cumulative decline
Year One	16%	16%
Year Two	17%	30%
Year Three	9%	37%
Year Four	7%	41%

This table assumes that competition is possible for domestic and non-domestic customers at the same time. Competition begins in Year 0.

The total revenue for the proposed Scottish Water in 2000-01 would have been £746.3 million (excluding inter-authority trading). The retail proportion would have been £108.9 million. The loss in revenue for the company's retail business would therefore be as set out in Table 13.47.

Table 13.47: Revenue decline in Scottish Water

Year	Retail revenue
Year Zero	£108.9m
Year One	£91.5m
Year Two	£75.9m
Year Three	£69.1m
Year Four	£64.3m

The impact on the proposed Scottish Water as a whole would be significantly less, as shown in Table 13.48.

Table 13.48 does not take into account any increases in tariff and is in constant prices.

The maximum revenue exposure is not significant relative to the benefit to customers that results from the achievement of the efficiency targets. If retail market share declines at the rate of British Gas, the impact on total revenue at year 4 is estimated to be £45 million. To put this in perspective, if the operating cost efficiency targets are only 50% achieved, then the cost to customers is £185 million. The priority from a customer standpoint is clear. The total retail gross margin for an average household is approximately £50. Even if significant economies of scale are available, there would not seem to be the opportunity to reduce bills by as large a sum as in the electricity or gas sectors. Even £15 for an average household would seem quite a large discount unless the current significant inefficiency is addressed. It is unlikely, therefore, that customers will switch suppliers for the extent of the saving on the bill.

Experience from other utilities has demonstrated that retail competition has brought choice to customers, better levels of service and lower prices. These lower prices have resulted partly from more efficient provision of the retail service, but also because the retail suppliers have applied pressure on the natural monopolies to reduce costs. This will benefit customers.

Choice will inevitably improve levels of service. The scope for reducing charges to attract customers away from an efficient incumbent is quite limited. It is therefore the level of service that is likely to be critical to customer retention. Customers, it would seem, can only benefit from the introduction of competition: there will be lower prices and better levels of service in the competitive market than if the current monopoly were to remain.

k) Conclusions

There has been much debate about the potential threat from competition. The threat has been exaggerated, unless the industry in Scotland fails to achieve its efficiency targets, does not develop broadly cost reflective tariffs and fails to improve its customer service. These are all within the control of the management of the Scottish water industry. Retail competition, even in a worst case scenario, should be less important from a customer standpoint than 25% of the total efficiency target for the industry. The key therefore is to address competition proactively and to do this by focusing at least as much on reducing costs as on improving customer service. If management is successful in so doing, then all customers will benefit.

Table 13.48: Impact of revenue decline on Scottish Water

Year	Total revenue	% Decline	Cumulative Decline
Year Zero	£746.3m	0%	0%
Year One	£728.9m	2%	2%
Year Two	£713.3m	2%	4%
Year Three	£706.5m	1%	5%
Year Four	£701.7m	1%	6%

Section 3: Chapter 14

Competition: Cost Transparency

a) Introduction

There are two broad types of product or service that can be supplied to customers. There are those where the customer has a high degree of discretion and is influenced by price, style, image and/or perception in varying degrees. And there are other types of service, such as the utilities, where price alone is the dominant factor in the decision making process. Water is particularly unique as the fixed cost element is quite exceptional¹. Although service levels are important in the utility sector, this is mainly in the context of mitigating or avoiding problems or improving the convenience offered to the customer. The result is that utility services are priced on primarily a cost plus appropriate return basis. As such, it is reducing costs that will be the best way to retain customers.

One of the primary functions of regulation is to ensure that costs are kept at the minimum level consistent with a sustainable and improving level of service. The recommendations contained in this chapter are designed to ensure that there is a continuing pressure on the water industry in Scotland to deliver the service at the lowest realistic price. Accounting separation of business (discussed below) and the increased in the market competition which results, will essentially play the same role as it did in the other utilities, i.e. it will increase the pressure for efficiency.

b) Comparative and market competition

Regulators will continue to use benchmarking as their primary weapon in determining the allowable costs for a monopolistic utility, and the return on capital that it should be able to earn. This mechanism has been very successful in generating greater efficiency in the water industry in England. This contrasts with market competition, which has played to date only a very minor role.

These improvements, whilst significant, do not compare with the improvements that have been seen in the electricity and gas industries. The developments in the electricity and gas industries have been partly a function of regulatory pressure, but also of increasing competition. There was a pressure placed on the vertically integrated suppliers in gas and electricity to dismantle their existing vertical integration and to separate out those activities that could clearly be made

competitive. This process increased the number of market places and supplier/customer relationships and results in for the market competition becoming similar in its effect to in the market competition (e.g. a meter reading business is focused on its customer, the retail service provider).

This de-aggregation has two principal effects. Firstly, competition to provide a service will increase innovation and efficiency. Second, it allows the regulator to benchmark the components of the vertically integrated organisation with a much higher degree of confidence. This will almost certainly highlight improvements that even the most effective and efficient company can make.

It is not only customers and regulators who benefit from this process of fragmentation of the value chain. Managers also benefit. They are able to assess more clearly which activities they are good at and where weaknesses lie. Current econometric models broadly reflect the various activities of a water business. However, the relative ranking of the benchmarked organisations for each model is, at best, of very limited relevance. This is because cost allocation by activity across the organisations will undoubtedly vary and may not reflect actual incidence of cost. These differences in cost allocation policies result in the regulator being able to establish relative efficiency for the organisation as a whole, but not being able, with any confidence, to assess relative efficiency at a functional level. Increased transparency of costs across functions can better assist managers in determining where to focus their efforts and, consequently, where to invest. This allows managers to align their activities with their business competences and will facilitate their achievement of efficiency. It will also help bring to light new opportunities. If, for example, a company sees that it is particularly good (i.e. efficient and innovative) at operating assets, then it may be possible to sell this expertise to another service provider in the market. This will, as a consequence, reduce overall costs in the market.

c) Importance of understanding costs

When a vertically integrated incumbent is faced with challenges at discrete points in its value chain (as opposed to across the whole value chain) it must be able to allocate its costs accurately if it is to succeed. This lesson has been learned by other incumbent suppliers of utility services (see Chapter 12).

¹ See discussion in Chapter 11.

The discussion on access charges for the use of essential facilities in Chapter 11 also addressed this issue.

Attempting to cover costs that were inappropriately allocated to a particular business by pricing too high will lead either to an accelerated loss of business (if this is a competitive activity) or to a challenge to the Office of Fair Trading (if the activity is a natural monopoly). It is therefore critical to ensure that costs are properly understood and allocated on an activity basis.

Much can be learned from the experience of the gas and electricity industries in implementing accounting separation of the various activities comprising the vertically integrated value chain. The best chance of achieving efficiencies and ensuring competitiveness will be if this separation is achieved willingly (see discussion of British Gas and British Telecom, Chapter 12).

d) Accounting separation

There are two accounting actions that will help better position the proposed Scottish Water in terms of providing value to all customers. Firstly there should be an appropriate degree of accounting separation; second, management should adopt a rigorous internal cost allocation process based on activity based costing.

Accounting separation is key to ensuring value for money over the long term for customers. This accounting separation can take place within a single organisation, or be forced by full legal separation. It is also possible to imagine an accounting split within a single organisation that has been required by the terms of a license. The greater the formalisation of the separation, the less easy it is likely to be to challenge the accuracy of the cost accounting. Accounting separation brought about by the terms of a license may be more open to challenge than when there is full legal separation, but it is more robust than a voluntary separation of activities implemented by owner or managers.

From the standpoint of the regulator, there is likely to be little difference between the possible reasons for an accounting separation. It will be possible to benchmark levels of cost and service and to identify the scope for further efficiencies. Targets can still be set, which should ensure that value for

money for customers continues to increase. The only real risk is that there will be an opportunity for gaming by management in order to receive a more favourable regulatory settlement. This clearly would not be in the interests of customers.

Customers are likely to benefit more when there is greater separation. This is for two reasons. The clearer the rules of the game, the more likely it is that a potential new entrant will take the steps necessary to enter the market. As discussed above, increased competition is likely to benefit all customers. The second reason is that when the conditions for accounting separation are imposed externally, there is less opportunity for the management to allocate costs in a way that puts them in a favourable light. This inevitably reduces the opportunity for gaming (flexibility allowing greater achievability of targets) and means that it will be much more difficult for management to retain value at the expense of the customer.

To ensure that customers receive the full benefit of the efficiencies that can be realised, an external discipline must be applied and should be seen to apply. For example, a detailed instruction from the owner is more likely to ensure that benefits of the fragmenting value chain are available to customers. However, a simpler instruction from owner to authority that they abide by the same accounting disciplines as required by other players in the market injects the extra clarity, which can result from a license condition. This reduces the flexibility available to management and ensures that more benefits accrue to customers.

e) Activity based costing

Activity based costing is designed to ensure that the true cost of each activity undertaken to supply a service is properly understood. Management that has this information will be significantly better placed to benchmark itself internally² and externally against other similar organisations. It will also help management respond to the pressures of competition or to the targets of the regulator. Customers will benefit as a result.

At present there is little understanding of costs in the Scottish water authorities; this is true both in the accounting and in the economic sense. It must be a priority of management and of

² Internal benchmarking is by far the easiest for a management to implement. It involves comparing the practices and processes of one part of the organisation with another and ensuring that plans are put in place to bring all similar areas into line with best practice. External benchmarking across organisations requires more work to ensure that like is being compared with like.

regulation to ensure that this understanding of costs improves not only at the macro level of the authority, but also at the detailed business process level. This will be a critical factor in the survival of the public sector model for the industry.

f) Importance for Scottish water industry

It is vital that the Scottish water industry is able to charge a fair price for the services that are provided to customers. This requires a detailed understanding of the infrastructure and equipment that is used in serving a customer (or group of customers) and the cost of providing this service. Accounting separation will also ultimately make it easier to justify the tariff levied. Furthermore, full activity based costing within an accounting separation becomes easier to implement. The priority clearly would go to those costs, which are incurred in serving the largest customers. It is these large customers who are most likely to move off-network if tariffs are not reflective of economic value.

i) Supplier of last resort

This is a difficult service to price³. Pricing will depend firstly on which last resort service is required by the customer. If a service is required on demand, the service infrastructure would have to be maintained such that the service could be provided whenever, or if ever, this was required. Service to customers can be summarised as comprising three elements:

- an access charge
- a customer service charge (administration of the account etc)
- a volumetric charge.

The first and second of these would apply to a customer who only wanted an on demand supplier of last resort contract. The access charge is likely to be the same whether or not water was supplied. The economic cost of providing the pipe remains approximately the same as the rate of deterioration of the pipe would be just as quick, if not more so, if no water is being used. The access charge would also cover the costs of the water or sewage treatment capacity reserved for that customer. There may be small savings in customer service if no water is being used, but these are likely to be immaterial. Clearly, there would be no volumetric charge.

An exception to this could arise if the water supplier were able to oversell capacity (as is frequently done in the airline industry) and could interrupt supplies to others if called upon to provide a supply urgently. In most cases, there would be little opportunity to juggle supplies successfully, at least in the very short run. Even the introduction of an interruptible tariff would not help a great deal as the interruptions would tend to be of a fundamental, rather than short-term operational nature.

In the event that a customer does want to maintain a supplier of last resort link with the water supplier, but does not require this to be available on demand, then there would be the opportunity to manage capacity in the network and this could reduce the access charge that would be payable. The administration charge however may be higher. Again the volumetric charge would be nil.

This would not apply in the case where the supplier of last resort connection accounted for a particularly large percentage of capacity. In this case, it may be appropriate for the customer to pay a reconnection fee, which would amount to the long run marginal cost of the connection. This would probably be cheaper than maintaining operational readiness on the existing connection.

In each case, correct pricing would require a full understanding of the infrastructure required and the costs associated with making this available to the customer. These costs would have to be calculated in a manner that is sufficiently robust for the customer to understand the costing and its implications. It must also be clear that there can be no question of unfair allocations of costs; if so, they could form the subject of an appeal to OFT.

ii) Fixed and volumetric tariffs

If the method of pricing does not reflect the way in which costs are incurred, incentives can be created that may not be to the benefit of the wider customer base or to the incumbent supplier. To charge on a variable volumetric tariff for the recovery of fixed costs will be a significant incentive to the customer to reduce the volumes they consume to a minimum. This may result in the service being provided, unintentionally, below a full economic cost. The volumetric charge is only appropriate either to reflect the variable elements of the costs (i.e. some of the costs of the delivered water) or if some limits are placed on the volumes to

³ This has been discussed in more detail in Chapter 11. A summary is provided here to illustrate the importance of correct cost allocation.

be charged. For example, so long as sufficient units are sold on a volumetric basis in order that fixed costs are covered, then there is no impact on other customers.

The key issue is again the need to ensure full and proper understanding of the costs of providing the service and the nature of those costs (i.e. their variability).

g) Benefits to customers

An efficient public sector monopoly should provide the lowest costs to customers. It would benefit from a very low cost of capital and, as an efficient monopoly, should be able to lever economies of scale in favour of customers.

Accounting separation of the major activities will ensure that a proper focus and efficiency develops. This does not preclude competition for the market within the existing vertically integrated structure; quite the reverse, reaching the efficiency frontier may actually require market testing of business processes. Cost transparency and negotiation with customers will reveal the true nature of costs and will drive efficiency forward. Regulation will be facilitated by accounting separation and better allocation of costs and this too will help to ensure that customers get a better deal. The process of negotiation with customers will also focus on customer service, and this should lead to further improvements in this area.

A better understanding and allocation of costs is likely to reduce the number of off-network deals. This will be in the long run interest of all customers.

Similarly, if the network is being operated efficiently, the costs of access will make common carriage unattractive and limit competition in the market to the retail end of the value chain.

Section 4

Costs

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Section 4: Chapter 15

Costs: Capital Investment Programme

a) Introduction

Chapter 4 discussed the Quality and Standards process. This chapter sets out the costs of achieving the Quality and Standards investment programme.

The investment programme 2002-06 defined by this process is the result of 18 months' effort to determine the investment needs required to ensure environmental compliance and to prevent any further deterioration in existing assets. The Quality and Standards investment programme is expected to:

- reduce the number of supply interruptions,
- reduce the frequency of water quality incidents and sewage floodings,
- enhance river, beach and coastal water quality and compliance,
- improve drinking water quality.

The capital investment programme is one of the most important inputs to this Review. I have accepted all of the original costings of projects supplied by the water authorities, but have applied a substantial efficiency target. I have also slightly reconfigured, in consultation with management, the profile of investment (whilst respecting all statutory deadlines), in order to improve the outlook for customers.

b) Definition of capital investment

Capital investment covers the building and modernisation of the assets the authorities require to perform their business.

Water industry assets may be categorised as follows:

Infrastructure assets

These are the network of pipes, pumps and valves. This network is required to operate effectively in perpetuity and provides the means by which distribution of potable water or collection of sewage and storm water is possible. Infrastructure assets may include dams, reservoirs, raw water aqueducts, water trunk and distribution mains, sewerage, sewage pumping mains and sewage outfalls. Infrastructure assets comprise the bulk of the water authorities' assets by value (see Figure 15.1).

Non-infrastructure assets

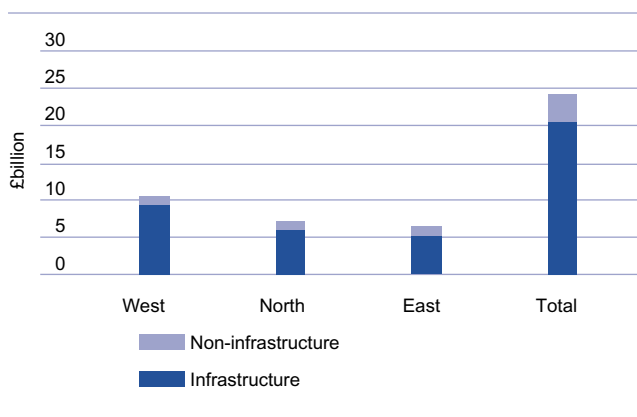
These are the specialised assets, usually of short to medium life. These assets are generally used for the production of water and treatment of waste water. Non-infrastructure assets include boreholes, water pumping stations, water treatment works, sewage pumping stations, sewage treatment works and sludge treatment and disposal facilities.

Support assets

These are the operational non-specialised assets, usually with a short to medium life, used to manage the business. Support assets include vehicles and plant, information systems, office fixtures and fittings, offices, depots and stores.

Figure 15.1 below illustrates the proportion of the estimated replacement costs of infrastructure and non-infrastructure assets. Infrastructure assets account for around 80% of total asset replacement costs. Support service assets, while not insignificant, are not material in comparison. Their current value is about £160 million.

Figure 15.1: Split of assets by estimated replacement costs

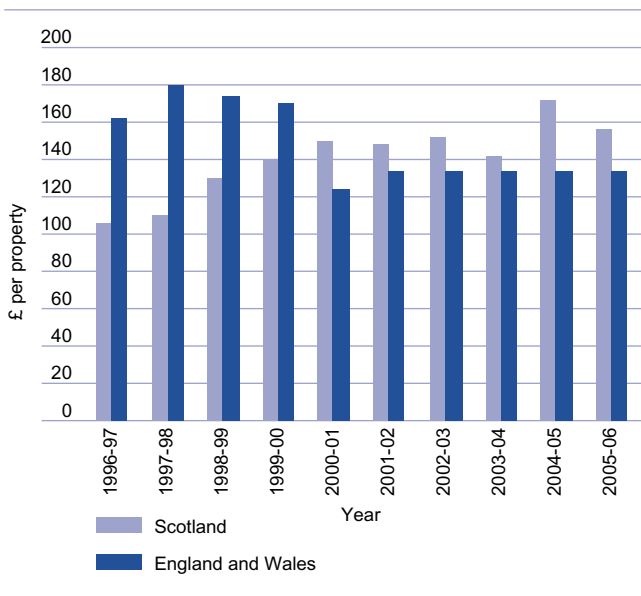


c) Importance of capital investment

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 massive replacement cost of the assets.

The history of under -investment in the water industry in Scotland makes this investment all the more important for customers. This investment is essential if Scottish customers are to enjoy the same service and standards that customers in England and Wales now receive. The increased capital investment in England and Wales during the 1990s has improved customer service, water quality and environmental standards far beyond the current position in Scotland. By increasing investment for each household during the Quality and Standards period 2002-06 to above English and Welsh levels, the authorities should be able to improve service. Levels of capital investment for each property are illustrated in Figure 15.2¹.

Figure 15.2: Levels of capital investment per property 1996-2006



By preventing further deterioration of the authorities’ assets, the investment programme will provide Scotland with a sustainable water network for the future. This investment will benefit customers now and in the future.

Although the Quality and Standards process only covered the period from 2002-06, the expectation of the quality regulators is that similar levels of investment are likely to be required in future Quality and Standards periods. The focus of this investment may switch from sewerage to water or to maintenance, but it would be imprudent to expect any major reduction in expenditure.

d) Quality and Standards process

The current Quality and Standards process sets out the standards of drinking water quality and environmental protection that the authorities need to meet, and the resulting cost. This allows prioritisation of the investment programme. The results of the Quality and Standards process were issued in a Consultation Document, by the Scottish Executive. This ensured that all stakeholders were able to express a view on the investment needs of the water industry in Scotland. The Quality and Standards process is outlined in detail in Chapter 4.

e) Summary of key improvements

The Quality and Standards investment programme will bring a number of marked improvements to customers in a variety of areas. These priorities closely reflect customers’ views expressed in the responses to questions put to the Water Panel.

The priorities are as follows:

i) Cleaner beaches, rivers and coastal waters

Table 15.1 shows the progress that will be made in improving treatment levels for Scotland’s sewage.

There should also be substantial progress in connecting those houses in rural areas whose badly installed septic tanks contribute to pollution of watercourses.

Table 15.1: Percentage of populations receiving secondary (biological) treatment

Year	East of Scotland Water Authority		North of Scotland Water Authority		West of Scotland Water Authority	
	2000	2006	2000	2006	2000	2006
Population benefiting from secondary treatment	39%	97%	34%	85%	62%	95%

¹ Investment in Scotland has been adjusted for inefficient spend. Investment is higher in Scotland in 2000-06, largely explained by the higher investment required for each property in more rural areas.

Table 15.2: Drinking Water Quality 1000 Index

Year	East of Scotland Water Authority		North of Scotland Water Authority		West of Scotland Water Authority	
	2000	2006	2000	2006	2000	2006
Drinking Water Quality 1000 index	990	991	948	991	965	980

Table 15.3: Indicative length of water main to be relined/replaced 2002-06

East of Scotland Water Authority		North of Scotland Water Authority		West of Scotland Water Authority	
Total length of water main	Length of water main relined/replaced	Total length of water main	Length of water main relined/replaced	Total length of water main	Length of water main relined/replaced
12,233km	820km	18,053km	875km	16,656km	1,811km
Proportion	7%	Proportion	5%	Proportion	11%

ii) improvements in the Drinking Water Quality 1000 index

The index covers regulatory compliance of drinking water at customers' taps with key parameters. The closer the figure is to 1000, the better the microbiological quality of the water.

These improvements are quite marked (particularly in the North of Scotland) but they still will lag behind the standards achieved in England and Wales in 1999. In 1999 the England and Wales Drinking Water Quality 1000 index average was 995. The planned investments for 2002-06 will bring Scottish drinking water much closer to the 1999 England and Wales standard, but further investment is likely to be required in the next Quality and Standards period.

iii) Improvements in the reliability of service to customers

Investment in this area is particularly targeted towards delivering increased water pressure to customers. In the absence of a defined pressure standard (see Chapter 23), an indication of the benefits of this investment is demonstrated by the length of water pipes that will be rehabilitated or replaced.

The measurement of lengths of mains refurbished is not ideal. It may provide an incentive to replace mains that could be replaced later. This would not be in the customer's interest.

I have therefore agreed with the authorities, the Scottish

Executive and the drinking water quality regulator that credit will be given if quality of service is improved by means other than full replacement of the mains. This could, for example, be achieved through pressure management or through the replacement of a valve.

The expectation of the Quality and Standards process is that investment in this area should be sufficient to limit the number of properties affected by low pressure to the current level. It is also expected that the investment will reduce the number of bursts and improve water quality generally. For example, the number of properties affected by low pressure in the East of Scotland Water Authority region should be reduced by 17.5%.

iv) Reductions in sewer flooding and blockages

The same comments apply to measuring the rehabilitation of the sewerage system as apply to water mains. However, given that management of the industry has been appropriately incentivised to seek the best solution from a customer perspective, measurement of rehabilitation of sewers is a useful proxy.

The expectation of the Quality and Standards process is that the rehabilitation of sewers will reduce the number of properties that are vulnerable to sewer flooding. Although this is a relatively rare problem (see Chapter 22), it is an issue that concerns very many customers. The investment should also

Table 15.4: Indicative length of sewer to be rehabilitated 2002-06

East of Scotland Water Authority		North of Scotland Water Authority		West of Scotland Water Authority	
Total length of sewer	Length of sewers rehabilitated	Total length of sewer	Length of sewers rehabilitated	Total length of sewer	Length of sewers rehabilitated
9,474km	97 km	7,422km	220 km	12,171km	129km
Proportion	1%	Proportion	3%	Proportion	1%

prevent an increase in the number of sewer blockages and improve the environment by restricting the amount of sewage that escapes from the system. For example, in the East of Scotland Water Authority area, the number of properties that are vulnerable to sewer flooding will be reduced to 10% of the year 2000 quantity by 2006.

v) Easing development constraints

One element of the Quality and Standards consultation that attracted particular interest was the potential for investment in easing development constraints. This was originally included only in the enhanced option, but was included (after the consultation) in the central option. There will, therefore, be a significant investment (over £10 million per year) to ease development constraints and extend rural sewerage connections. This will have quite a major influence on the environment and will provide the option to connect to the public supply for many customers.

f) Meeting customer expectations

This Quality and Standards programme of investment will meet many customer expectations for cleaner beaches and rivers, reduced sewer flooding and better sewage treatment. The clear intent of the investment is to take full account of future investment needs and to ensure that the current investment programme fits within a framework for a sustainable industry.

In my consultations with customers over the last 18 months, a number of common threads have run through the discussions regarding customers' concerns and desires for investment priorities. In particular, in the first survey of the Water Panel, which was carried out in October and November 2000, the following issues were perceived by domestic customers to be major problems:

- coastal waters polluted with sewage (83%),
- rivers and lochs polluted with sewage (60%),
- leaking water pipes (52%),
- external flooding from sewers (38%),
- smell around sewage works (37%).

In a questionnaire distributed through their industry associations and representative bodies, the non-domestic sector also expressed concerns. Their priorities were for improved sewage treatment, increased cleanliness of rivers, coastal areas and beaches and improvements to the reliability of supply by replacing or repairing water mains. The responses

to the questionnaire indicate that the non-domestic sector seem to be prepared to pay for the improvements that they seek. The questionnaire asked: "Which of the following options would you prefer to see in relation to pricing and investment policy in the water and sewerage industry over the next few years?" The responses were as follows:

Table 15.5: Responses to non-domestic questionnaire

Options	Response
Prices rise in line with inflation, some quality and environmental standards are not met, the quality of infrastructure remains poor (increased risk of water leaks/service failures)	25%
Prices rise by more than inflation, most quality and environmental standards are met, the quality of infrastructure remains quite poor (risk of water leaks/service failures remains)	32%
Prices rise initially by a number of times more than the rate of inflation, legal and environmental standards are met, the quality of infrastructure improves to sustainable standards of service reliability	43%

g) Implementation of Quality and Standards

The approved central option investment programmes for the three water authorities during the next Quality and Standards period (2002-06) would result in an expenditure of approximately £2.3 billion by the water authorities, at current levels of efficiency. Figure 15.3 below illustrates the total capital investment required over the period.

The investment may be further categorised into Base, Quality, Growth and Infrastructure renewals.

Figure 15.3: Capital investment by purpose category 2002-06

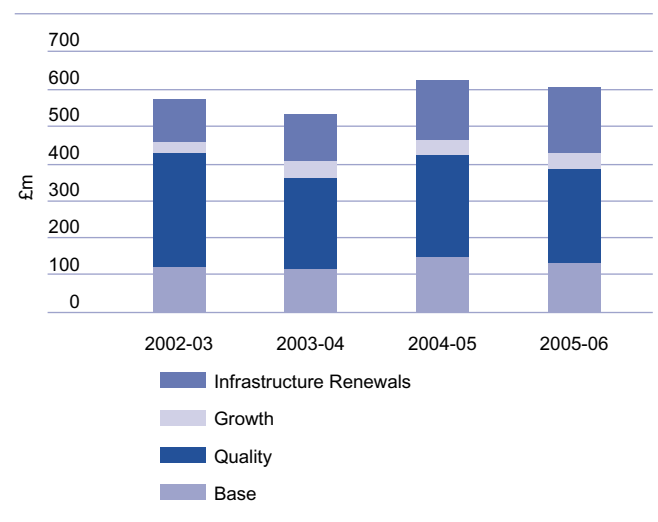


Table 15.6: Water service quality investment 2002-06

	2002–03	2003–04	2004–05	2005–06	Total
Drinking Water Directive (98/83 EC)	£82.8m	£72.0m	£60.8m	£58.0m	£273.6m
The Cryptosporidium (New Water and Sewerage Directive) Direction 2000	£19.4m	£18.8m	£27.4m	£22.1m	£87.7m
Water Mains Rehabilitation	£10.2m	£12m	£15.2m	£17.6m	£55.0m
The Abstraction Directive	£0m	£0m	£0m	£0m	£0m
The Birds Directive, The Habitats Directive	£0.01m	£0.01m	£0.01m	£0.01m	£0.04m
Totals	£112.4m	£102.8m	£103.4m	£97.7m	£416.4m

The investment purpose categories can be defined as follows:

Quality

Investment categorised as quality enhancing. This delivers outputs necessary to implement new legislative requirements relating to drinking water quality and waste water treatment. Quality accounts for around 50% of total investment.

Growth

Investment categorised as growth is required to meet demand for services from new and existing customers by providing new assets or increasing the capacity of existing assets. Growth only accounts for a small percentage of total investment, around 5%.

Base

Investment categorised as Base is necessary for the maintenance of defined service levels to customers. This is the ongoing replacement of assets that provide the current level of service. It is the replacement of equipment at the end of its useful life with a similar asset. No improvement in the underlying average service results. This does not include the renewal of infrastructure mains (below).

Infrastructure renewals

Investment categorised as Infrastructure Renewals is the cost assessed to be the average annual cost required to maintain the underground infrastructure of pipes, which are required in perpetuity, in the same condition and at the same performance level. If the investment targeted at 'base' and 'infrastructure

renewals' is taken together (this is the total investment required annually to keep the system functioning without any improvement for any customers) then this 'maintenance investment' represents some 45% of the total programme.

Quality and infrastructure renewals are the most significant elements of the capital investment programme in terms of size. These are examined in more detail below.

i) Quality

The water quality investment programme in 2002-06 amounts to around £420 million (£181 per property), while the environmental waste water programme totals around £630 million (£272 per property). This is in excess of £110 per property per year – approximately half the current average annual domestic bill.

To put this in perspective, the English and Welsh companies will be spending £2,260 million during the period 2000-05 for water quality improvements, an average of £101 per property. Waste water quality improvements will cost £5,120 million, averaging £237 per property².

Table 15.6 sets out the regulations and directives driving the Scottish quality programme.

The main legislative drivers for investment in water quality are the Drinking Water Directive (98/83EC) and the Cryptosporidium Direction 2000.

The new European Drinking Water Directive has far reaching implications for water treatment. Until now, European legislation has required that water authorities must treat the raw water to remove the microbiological impurities that are the principal

² Ofwat 1999 Periodic Review: Final Determinations: section 4.7 Table 7. Numbers of customers extracted from Ofwat Tariff Structure and Charges 2000-01 Report Annex B.

Table 15.7: Waste water quality investment 2002–06

	2002–03	2003–04	2004–05	2005–06	Total
Control of Pollution Act 1974 S34	£30.0m	£34.4m	£26.5m	£23.9m	£114.8m
Improvements to poor or seriously polluted waters	£0.1m	£0.6m	£3.0m	£1.4m	£5.1m
Recreation and non-identified coastal waters	£6.5m	£2.4m	£3.0m	£0.6m	£12.5m
EC1: UWWTD	£98.4m	£92.3m	£106.5m	£79.3m	£376.5m
EC2: Bathing Waters Directive	£6.7m	£5.7m	£13.1m	£12.9m	£38.4m
EC3: Shellfish Waters	£3.4m	£3.9m	£8.5m	£28.8m	£44.6m
EC4: Freshwater Fish Directive	£0.2m	£1.0m	£7.8m	£10.0m	£19.0m
EC6: Sludge Directive	£5.3m	£6.2m	£1.0m	£0.1m	£12.6m
EC8: Habitats Directive	£0m	£0m	£2.9m	£2.5m	£5.4m
EC9: Dangerous Substances Directive	£0m	£0m	£0m	£0m	£0m
Totals	£150.6m	£146.5m	£172.3m	£159.5m	£628.9m

health risk. The main impact of the new Directive will be to ensure that the process of removing these impurities does not itself create new impurities, called THMs (trihalomethanes) and to set progressively tighter standards for the quantity of lead in water that is acceptable. Full compliance with most standards is required by the end of 2003. Compliance with the permanent THM standard is required by the end of 2008 and the permanent lead standard by 2013.

The Cryptosporidium Directive also sets out a strict timetable to reduce the assessed risk by 2005. Customers will benefit from this investment, as there will be a much reduced risk of cryptosporidiosis. This illness is caused by a parasite that infects humans and animals. The effect is severe diarrhoea. This investment will replace or upgrade a number of water treatment works that will be capable of removing cryptosporidium. Amongst the largest is the proposed upgrading of the Milngavie Treatment Works, which serves much of Glasgow.

This quality investment programme (2002-06) in the water service means that customers can look forward to better water quality and the considerable public health benefits that will result.

The major drivers for wastewater quality investment in the period from 2002-06 are the Control of Pollution Act and the EC

Urban Waste Water Treatment Directive 91/271/EEC (UWWTD).

The UWWTD links the level of sewage treatment, and the dates by which the treatment should be in place, to the size of the community or communities served by a sewerage system. The Directive states that the water authorities had to provide secondary treatment by the end of the year 2000 for communities with a population equivalent³ of more than 15,000. There are different legal requirements for areas designated as sensitive or less sensitive waters. If the population equivalent is less than 15,000, the water authorities must provide sewerage systems and treatment plants by the end of 2005. The level of treatment required will depend on the quality of treated effluent and its impact on the environment. This investment will directly benefit a large number of customers in Scotland. (See Table 15.7).

Public Private Partnerships (PPPs) (see Chapter 17) will be delivering approximately £56 million of the quality investment in wastewater. This investment is to meet the deadlines and treatment requirements of the UWWTD in this Quality and Standards period. The £56 million is the construction cost⁴.

The Quality and Standards programme also includes investment to meet the requirements of the Control of Pollution Act 1974. This will fund new sewage treatment works and sewerage system upgrading, with the aim of tightening the

³ Population equivalent is calculated by counting the domestic population and adding the waste generated by industrial and commercial customers. That waste is compared with the quantity generated by the average domestic customer. This leads to an assessment that a particular non-domestic customer is equivalent to a certain number of domestic customers. The 15,000 threshold can therefore impact some very small communities.

⁴ As quoted in the Transport and Environment Committee 9th Report 2001 (Volume One).

existing statutory discharge consents. There is no specific legislative timetable, although the investment is no less important to customers. This investment will improve the compliance levels of the water authorities with the Act and, as a result, customers can expect cleaner rivers, beaches and coastal waters.

It should be noted, however, that not all pollution results from the activities (either directly or indirectly) of the water industry. Compliance by the water authority is not in itself a guarantee that all our rivers and estuaries will return to the standard we would like. As highlighted recently to the Transport and Environment Committee, other forms of pollution, notably diffuse pollution from agriculture and industry, will also need to be addressed if the full benefit of the environmental improvement is to be enjoyed.

ii) Infrastructure renewals

Spending on infrastructure renewals has traditionally been very low and well below desirable levels. Investment in this area has been growing since 1996 and there will be a further acceleration in investment in the period between 2002-06 (see Tables 15.8 and 15.9⁵). This investment will begin to improve the supply and collection networks and ensure that there is no further deterioration in the performance and condition of the water mains and sewerage network serving Scotland.

The profile of capital maintenance on the underground infrastructure is increased to a level that is higher than the long

Table 15.8: Water infrastructure renewals investment

	2002-03	2003-04	2004-05	2005-06	L.T.N.C.
East	£17m	£15m	£27m	£31m	£23m
North	£31m	£25m	£41m	£43m	£33m
West	£21m	£22m	£56m	£57m	£35m
Total	£69m	£62m	£124m	£131m	£91m

Table 15.9: Wastewater infrastructure renewals Investment

	2002-03	2003-04	2004-05	2005-06	L.T.N.C.
East	£7m	£7m	£12m	£15m	£10m
North	£10m	£16m	£21m	£26m	£10m
West	£8m	£11m	£21m	£26m	£17m
Total	£25m	£34m	£54m	£67m	£37m

term normative charge, and which should therefore prevent further deterioration of the infrastructure, and may even begin to address some of the backlog. The back-loading of the investment should also be in the customer's benefit, as investment will be more efficiently prioritised as better quality data becomes available.

h) Potential problems in delivering the investment programme

i) Quality of asset information

The Information Project highlighted the need to improve further the information that the authorities have about their assets (See Chapter 3). The information available to the authorities and to regulators has improved very markedly over the last two years. Whilst it is not close to being perfect, there can be quite a high degree of confidence that it is directionally correct. Although there inevitably remains a risk in the Quality and Standards programme to the desired outputs, this is lower than it has ever been before.

The limits to existing information could be a risk to the delivery of the outputs required by future Quality and Standards processes. It is in the customer's interest that we ensure that investment is targeted as appropriately as possible. From the standpoint of sustainability, it is likely that, as the industry learns more about the condition and performance of its networks, further investment needs may be identified. This could have negative consequences for customer prices. I have therefore proposed that I work with the Scottish Environmental Protection Agency and the proposed new Drinking Water Quality Regulator, to design a system of output measures by which it will be possible to monitor the implementation of this and future Quality and Standards programmes. This initiative will be a valuable investment in ensuring that value for money is achieved for customers. This is discussed in more detail in Chapter 19.

ii) Management distraction

Some opponents of the creation of Scottish Water have suggested that the proposed merger of the three authorities into Scottish Water might distract management attention away from delivering the capital programme and that this could result in delays. I believe that I have the monitoring systems in place that will allow early warning of any such slippage in the investment programme. Obviously, I would highlight any

⁵ L.T.N.C. means the Long Term Normative Charge calculated by WIC (refer to Chapter 4).

danger to all stakeholders, at the earliest opportunity. The potential danger of a loss of focus by management was also recognised by the Transport and Environment Committee, which recommended delaying the implementation of the new competition provisions as this was another potential distraction to management. The delay in the implementation of the new competition provisions should ensure that delivery of investment and efficiencies remains on track.

iii) New legislation

The other area of potential risk to the Quality and Standards programme is the possibility that new environmental or water quality legislation will require investment during the current period. I look to the quality regulators to signal as early as possible any extra investment requirement.

iv) Procurement

One of the principal delivery risks is in the area of procurement. The transfer or sharing of risk with partners or contractors or joint ventures may be the best way to ensure that the programme is implemented effectively and efficiently.

i) Monitoring of outputs

My office will continue to monitor the implementation of this huge investment programme. This monitoring will increasingly be on an output basis. The process of monitoring delivery of outputs, and my role in it, is described in Chapter 19.

j) Conclusion

Capital investment is crucial for a number of reasons; for sustainability, to compensate for historical under-investment and to meet current and future customer needs and expectations.

The Quality and Standards process has planned investment of £2.3 billion pre-efficiencies in 2002-06 and this will deliver marked environmental benefits; cleaner beaches, coastal water and rivers. These have been confirmed as the key priorities of customers. Drinking water quality and overall customer service will also be improved by increasing the reliability of supply (including water pressure) and by reducing the number of sewer flooding and blockage problems. Whilst this may not affect many customers, the consequences of these problems

for those customers affected is severe. This therefore is an important initiative for customers.

The Quality and Standards central option of investing £2.3 billion in Scotland's water industry must, however, be delivered efficiently to ensure value for money for customers. The need for efficiency and the targets I have set are outlined in Chapter 19.

Section 4: Chapter 16

Costs: Debt Funding & Treasury Management

a) Introduction

One of the major costs faced by the water authorities is paying interest on outstanding debt. It is important to distinguish between the debt owed by the water authorities and the debt owed by customers to the water authorities. This chapter is about the money owed *by* the water industry.

A commercial organisation should manage debt in much the same way as any individual. It is vital to remember that it will be necessary not only to pay the interest on debt, but ultimately to repay the capital. It is sensible to ensure that the costs of interest do not become too high a proportion of income - the higher that proportion becomes, the more vulnerable the organisation or individual. For example, if a family earns after taxes £15,000 a year in base salaries and a further £6,000 in overtime, total disposable income is £21,000. If interest charges on various household credits (mortgage, car loan etc.) is £6,000 a year then there is a fair margin of income available, which is not committed to interest payments. If the overtime income was lost, however, the impact on this family could be quite serious as disposable income after interest charges would decrease from £15,000 to £9,000. This may mean that sacrifices in lifestyle would result. The situation for a water authority is very similar. If interest charges become too high a proportion of revenue, revenue reductions forced upon the authority by competition or an increased need for environmental investment could result in a lower level of service or a need to increase prices. This would not be in the customer's interest.

The repayment of capital can be an equally important pressure, albeit one, which is less frequent than the day-to-day pressure of meeting interest charges. The capital can be repaid either throughout the term of the debt or at the end of the term. If the borrower opts to repay at the end of the term, it is important that funds are available to repay the loan at this time. An example is the traditional endowment mortgage where only the interest is paid during the term and a separate savings contract is maintained in parallel in order to ensure that funds are available to repay the loan. The importance of having these resources to hand in order to repay debt is evidenced by the problems faced by those who were victim to the mis-selling of endowment mortgages. In these cases, there could be insufficient savings available to repay the outstanding capital of the mortgage. If this occurs when income is limited (after, say retirement) then

the consequences are particularly serious. If income is still available, further capacity to borrow (say for a new car) would be reduced if the individual was not to have too high a proportion of their income committed to interest charges.

It is not prudent simply to borrow again to repay the capital of a previous loan - unless this debt is associated with the renewal of an asset and the interest charges remain at a reasonable proportion of total income. If this golden rule is not adhered to by the water authorities, their capacity to borrow to meet the costs of new environmental improvements would be limited. This chapter explains in detail why it is in the customer's interest that we begin to limit borrowing now in order to ensure that we have a financially sustainable industry. If we do not adopt this cautious approach we will substitute a debt mountain for the investment backlog. This is not the inheritance that we would want to leave to future generations.

b) Current situation in Scotland

Each of the three Scottish authorities has been cash negative since their creation. In April 1996, the three organisations inherited a total debt burden of £1 billion. This has since grown to over £1.9 billion as at March 2001. Figures 16.1 to 16.9 indicate the change in debt levels and interest charges for each of the three water authorities since their creation. The dip in total debt for the North of Scotland Water Authority in 1997-98 was due to a debt restructuring exercise. In each case there has been a steady increase in debt per customer and an increasing absolute amount of the typical bill is going to fund interest. This is clearly not sustainable.

Figure 16.1: East of Scotland Water Authority debt

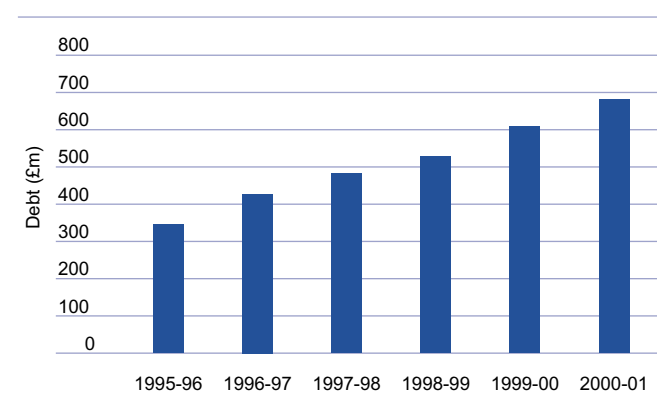


Figure 16.2: North of Scotland Water Authority debt

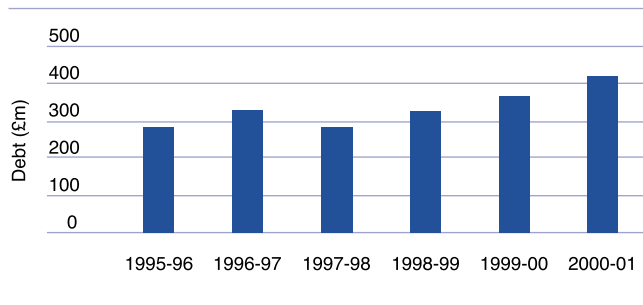


Figure 16.3: West of Scotland Water Authority debt

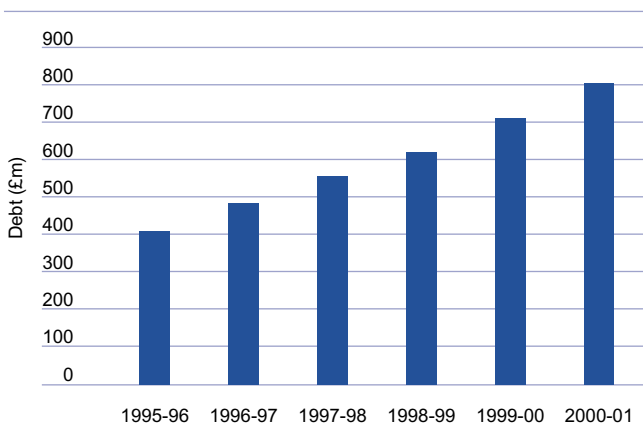


Figure 16.4: Interest payable by East of Scotland Water Authority

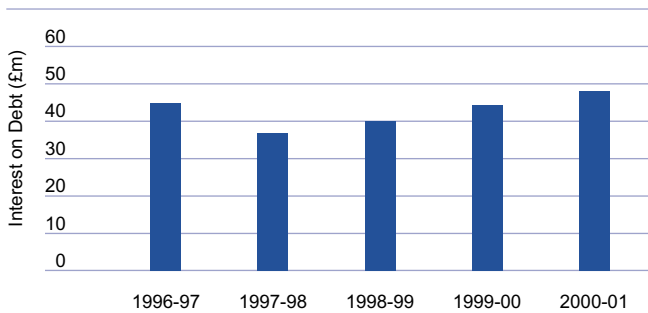


Figure 16.5: Interest payable by North of Scotland Water Authority

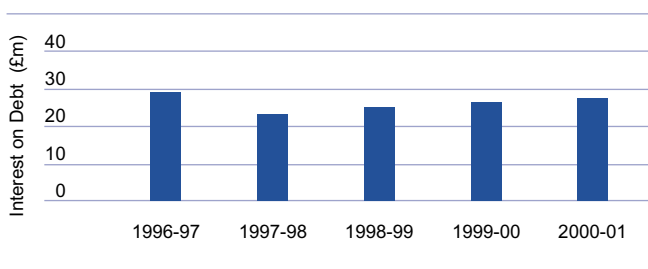


Figure 16.6: Interest payable by West of Scotland Water Authority

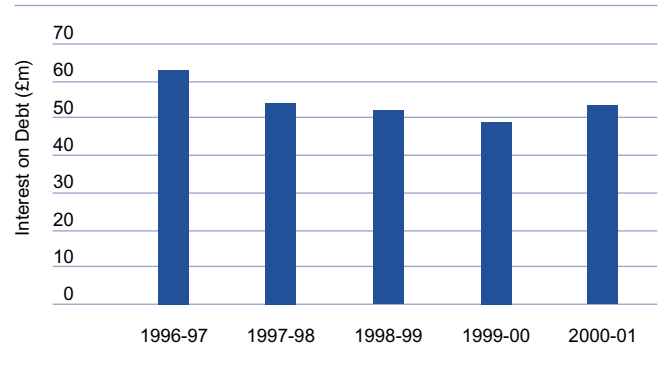


Figure 16.7: East of Scotland Water Authority interest allocated to a Band D customer

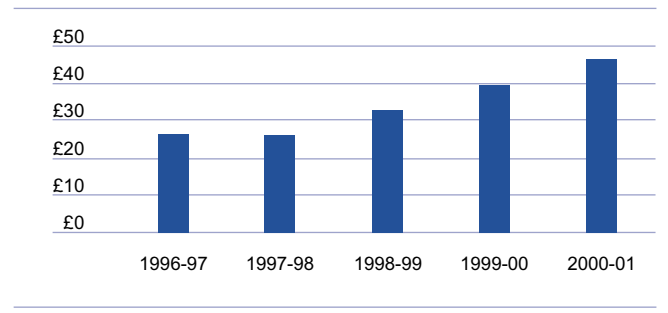


Figure 16.8: North of Scotland Water Authority interest allocated to a Band D customer

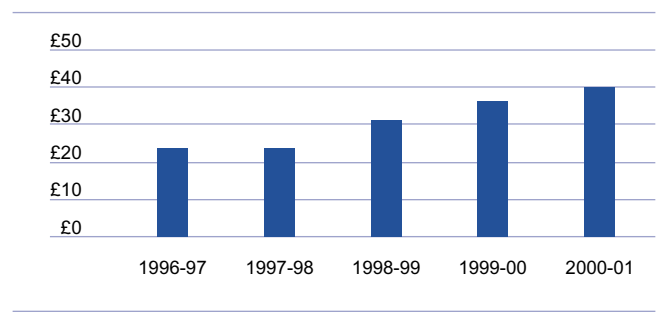
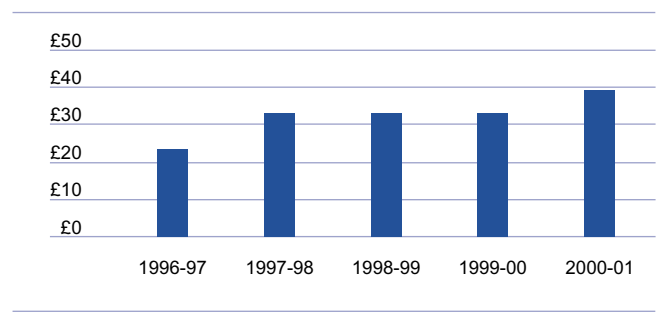


Figure 16.9: West of Scotland Water Authority interest allocated to a Band D customer



Unless revenues are brought broadly into line with the average continuing annual obligations of the water authorities, there will be a continuing need to increase borrowing in order to balance the books at the end of the financial year.

As explained above, borrowing can play an important role in smoothing the cash needs of the authorities over periods of particularly high investment. However, the borrowing should only be used when legislative, practical, or operational deadlines require the acceleration of capital spending. Additionally, it must be borne in mind that borrowings need to be repaid with interest from future revenues. This will result in revenues having ultimately to be increased to meet the higher maintenance and replacement costs of the overall improved system, not to mention the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditures faced by the authorities, borrowing is only delaying and worsening the charges levels that will be faced by future generations. For example, if revenues are not sufficient to cover all outgoings and the costs of asset maintenance, there will be an increasing debt and interest burden, the bill for which would have to be paid by future generations. This is akin to each of us borrowing during each year of our lives and leaving the bill for our profligacy to our children.

An example illustrates the point. The North of Scotland Water Authority had £421.5 million of debt as at 31 March 2001. If the revenues, operational and investment costs of the water

authority were to increase at the rate of inflation, the only way in which revenues could be supplemented to meet the higher operational, investment and financing costs, is to increase borrowings. Table 16.1 demonstrates the result.

A sustainable business requires that interest charges over the long-term should remain at about the same percentage of the cash generated from operations. There will inevitably be fluctuations to meet unforeseen or sudden investment needs, but over the longer term this rule should hold.

It is often argued that debt should be written off (as it was in England and Wales). However, because the need for new debt is currently greater than the interest charges faced by each of the water authorities, the same gloomy picture of interest charges, representing an ever-increasing proportion of revenue, would be repeated. By way of illustration, the North of Scotland Water Authority example above is repeated, except that the £421.5 million of debt that was outstanding at the end of the 2001 financial year has been commuted.

Table 16.1: Borrowing and financial sustainability

	2001	2006	2010	2015	2020	2025	2030
Revenues	£207m	£234m	£259m	£293m	£331m	£375m	£424m
Operational costs	£110m	£124m	£137m	£155m	£176m	£199m	£225m
Capital costs	£125m	£134m	£143m	£154m	£166m	£178m	£192m
Interest costs	£27m	£47m	£68m	£102m	£147m	£206m	£285m
Borrowings increase for year	£54m	£72m	£89m	£118m	£156m	£208m	£278m
Total debt outstanding	£422m	£743m	£1,072m	£1,601m	£2,302m	£3,233m	£4,474m
Interest costs as % of revenue	13.0%	20.2%	26.4%	34.8%	44.0%	54.9%	67.2%

Table 16.2: Borrowing and financial sustainability (after debt commutation)

	2001	2006	2010	2015	2020	2025	2030
Revenues	£207m	£234m	£259m	£293m	£332m	£375m	£424m
Operational costs	£110m	£124m	£137m	£155m	£176m	£199m	£225m
Capital costs	£125m	£134m	£143m	£154m	£166m	£178m	£192m
Interest costs	£27m	£10m	£20m	£35m	£53m	£76m	£104m
Borrowings increase for year	£54m	£34m	£41m	£51m	£63m	£78m	£97m
Total debt outstanding	£0m	£157m	£310m	£543m	£831m	£1,189m	£1,634m
Interest costs as % of revenue	13.0%	4.3%	7.6%	11.8%	16.0%	20.2%	24.5%

c) Debt commutation

The assertion that the Scottish water industry received a worse deal than the privatised companies in England and Wales in the extent of debt that was commuted does not stand up to detailed scrutiny. Indeed it could be easier to argue that customers of the privatised companies received a worse deal.

It is important first to explain that debt cannot simply be commuted or wiped out. Only the original lender or a third party can eliminate debt. In the case of the original lender a loss of the original capital has to be accepted and there is also a loss associated with the interest payments that are foregone. If a third party wants to eliminate the debt, it can repay in full or it is possible to pay the interest charges and make gradual capital repayments or a one-off payment at the end of the term. The extent to which an individual customer may benefit from this policy would depend upon the extent to which they paid taxes and the relative benefit that they received from public services. It is likely that such a policy would benefit the commercial rather than the domestic sector, since the latter benefits more directly from public services. It is unlikely therefore that even if there were significant benefits in lower water charges that this would be in the best interests of all customers.

At privatisation in England and Wales, a total debt of £5.1 billion was commuted; this is net of £100 million of debt that was issued by two of the companies in favour of the Treasury¹. In addition tax losses of £7.76 billion were transferred to the privatised companies. The sale of the equity of the privatised companies realised £3.9 billion. The total cost to the Treasury,

therefore, was £1.2 billion. The total cost per household was, therefore, £50. The initial public offering of the equity offered a dividend yield ranging from 8.10% to 9.68%.

At the establishment of the three water authorities in Scotland, some £700 million of local regional council debt, which had been accumulated in relation to water and sewerage activities, was commuted. This left a total of £1 billion of debt on the starting balance sheets of the three water authorities. Since the assets remain fully within the public sector, there have been no receipts from the sale of assets by the Treasury. The water authorities do have unused tax allowances, either from losses and from investment allowances that can be used to mitigate tax on future profits. As at 31 March 2001 the tax allowances total approximately £1.7 billion (gross). The total cost to the Treasury from this reorganisation was therefore £700 million. This amounts to more than £300 per customer - about six times greater than in England and Wales.

A persuasive consideration that the Scottish water authorities fared worse concerns the high cost of debt faced by the water authorities after 1996. The average coupon (interest charge) on this debt was 8.4%. This, however, compares favourably with the dividend yield that had to be offered to potential shareholders in order to ensure a successful flotation. In short, the customer in Scotland should have had a better deal. Only operational and capital cost inefficiency can give the impression that the customer in Scotland has received a worse deal. This is indeed the area that has to be addressed if the interests of customers are to be protected. Moreover, the customer in Scotland benefits from the low cost of debt that is available to the Scottish water authorities. This is lower than

¹ Two bonds, one valued at £61.0 million and a second at £11.9 million were issued to the Treasury by Anglian Water plc and Thames Water plc.

Figure 16.10: Treasury Yield Curve for September 2001

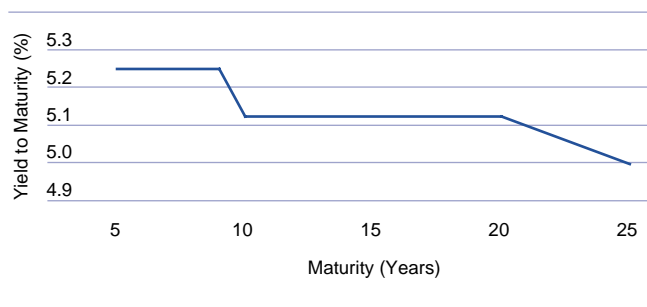
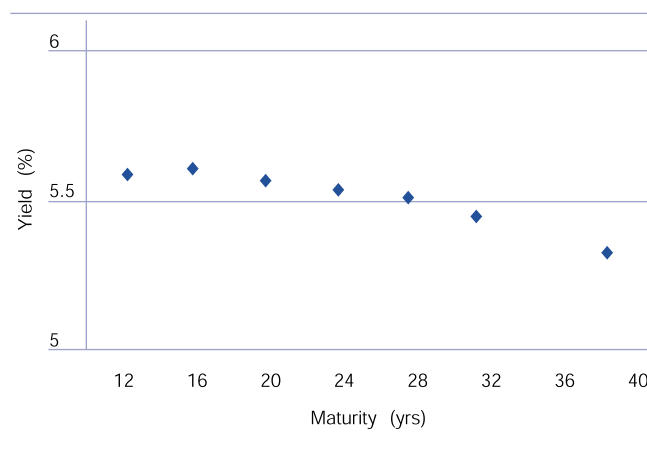


Figure 16.11: European Investment Bank Sterling Yield Curve (taken as AAA rated) for September 2001



would be available to even the best private sector company. The above graphs show the Treasury yield curve for 2001 and the equivalent yield curve for sterling AAA rated paper.

Figures 16.10 and 16.11 show clearly that there is a considerable premium (0.2 – 0.4%) on even the highest quality private sector debt. Interest rates at institutions such as the European Investment Bank or the International Finance Corporation² for loans related to infrastructure projects may be lower than market rates, but they are not able to compete with loans from the Treasury.

The principal reason why charges have been, until recently, higher in England and Wales is that the privatised companies have made more and earlier progress towards meeting their environmental compliance targets. The effects of the increases have been mitigated by the much greater efficiency that the companies have achieved. Bills may have been as much as 25-30% higher than their current level if the efficiencies had not been achieved.

d) Achieving sustainability

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. Given the significant increase in investment that is required to move from the current level to that associated with the central option of the Quality and Standards process, it is not possible to make a one-off adjustment to revenues in order to achieve the goal of financial sustainability. Nor would this be desirable, as it would result in an increase in revenue to a level greater than that required in order to maintain a constant free cash flow to interest ratio. The targeted efficiencies will take time to achieve and there will also be costs associated with achieving the savings - both of which would again push the revenue level required to a higher level.

The recommendation of this Review is, therefore, that the increases in revenue, which are required to achieve financial sustainability are phased in over the full four year period. This will require new debt to be taken on at a rate greater than is strictly desirable and a consequent worsening in the free cash flow to interest ratio. The ratio that will result under the recommended revenue caps is 1.0 for the year 2005-06. The forward projections for the period beyond 2006 suggest that it should be possible to improve slightly this ratio. This has the advantage for customers that all options regarding the future investment in the industry would be opened up by the end of this review period. This is important because it allows the Scottish Executive, as the de facto owner of the industry, to respond to developments in the water and broader utility sector in the remainder of the United Kingdom. This will ensure that the best option for Scottish water industry customers can continue to be chosen.

e) Treasury management

Treasury management is an important function within any company or trading organisation. This discipline concerns the effective management of the cash and debt requirements of the organisation. It can extend to covering foreign currency trading risks and the exposure to overseas markets through subsidiaries.

Fortunately, Treasury and debt management is relatively straightforward in a regulated water business. There is no need for some of the more complex activities of the treasury

² The commercial lending arm of the International Bank for Reconstruction and Development (World Bank).

management function of an international diversified corporation, such as currency hedging, interest rates swaps or limiting of transaction risk. Income from customers is, relative to most businesses, highly predictable. As a result of this Review, there will be four year visibility of the likely revenue receipts. As a consequence, it should be straightforward to plan the requirement for new debt funding. The knowledge that the water authorities or authority will be cash negative for each of the next four years further simplifies the calculation.

i) Downward sloping yield curve

In normal circumstances, short-term debt is cheaper (i.e. it carries a lower coupon) than long-term debt. This can mean that it is better to fund debt needs in the short term and opt relatively rarely for a long term refinancing. There is a need to assess transaction costs (both financial and overhead) in determining the optimum solution. When there is a clear need to acquire more debt during the year and there is a downward sloping yield curve, it is appropriate to take on long-term debt at the earliest opportunity as this will minimise costs.

A simple example will illustrate. In this example, short term debt costs remain constant throughout the year at 5%, and long term costs remain constant at 4%. Two inflows of cash are required on days 1 and 183, each of £500,000. If the debt is taken on a short term basis, and rolled over to a long term basis at the end of the financial year, the total cost is £37,500. If it is taken immediately as long-term debt, the cost would be £30,000. Tables 16.3 and 16.4 illustrate this example.

Table 16.3: Short-term debt at 5% (Rolled over at end of year)

	Day 1	Day 183	Day 365	Total outstanding/payable
Amount borrowed	£500,000	£500,000	£0	£1,000,000
Interest charged	£0	£12,500	£25,000	£37,500

Table 16.4: Long-term debt at 4%

	Day 1	Day 183	Day 365	Total outstanding/payable
Amount borrowed	£500,000	£500,000	£0	£1,000,000
Interest charged	£0	£10,000	£20,000	£30,000

A review of cash flow management by the authorities has shown that there is an over reliance on short term debt and in one case a tendency to maintain a cash balance (even although the authority is cash negative during the year). This would suggest that the water authorities could improve their treasury management. The recommendations on revenue caps take account of these savings.

ii) Managing receipts

This chapter is primarily about the improvements that the water authorities could make in their management of their debt capital. Inevitably, success in the management of this debt depends on the water authorities being able to predict the receipts that they will receive from customers. This predictability in cash flow depends upon active management of customers' debts to the water authority. This is essential throughout the year, and not just towards the end of the year when there is the pressure for action generated by the year-end. This again is an area for improvement by the industry and again the recommendations on revenue cap take account of this opportunity. This issue is discussed at greater length in Chapter 24.

f) Implications for customers

The costs of debt currently amount to some 20% of the total income received by the water industry in Scotland from customers. There is a short term cost to customers in ensuring that revenues are brought into line with stable financing ratios. There is a clear benefit, however, in the medium to long term as there will be considerable extra flexibility available both to the owner (in terms of organisational structure) and management (in terms of responding to the challenges of further investment in improving the environment). Most importantly, customers will benefit because there will be no likelihood that levels of service are compromised because of pressures on income. Additionally, there should be more than enough financial flexibility to ensure that additional quality standards are implemented in a way that is affordable to customers.

Section 4: Chapter 17

Costs: Public Private Partnership Financing

a) Introduction

i) Background

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), later renamed Public Private Partnership (PPP), was introduced as an alternative method of providing services to public sector customers. The new scheme placed emphasis on the partnership that would have to exist between the private and public sectors if this method of service delivery was to be fully effective. The original aim may have been to reduce the demand for new loans from central government for new capital investment, but the primary benefit of the successful schemes would appear to be in timely delivery and in the innovative solutions for construction and operation of new and modernised facilities. These benefits ensure that customers face bills lower than would otherwise have been necessary and should receive a better service more quickly.

ii) Purposes

By 1997, it had become clear that there needed to be a step function change in the level of investment that was going to be required if the water and sewerage 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 timescale meant that the PPP route offered an attractive solution. It seemed likely that the PPP route would deliver the benefits more immediately, within the constraints of public expenditure and would keep charge increases to as low a level as possible. It is an essential criterion of PPP that value for money in the delivery of the service should be demonstrated against traditional public sector delivery of equivalent outputs.

The water authorities assessed a range of possible partnerships and nine projects progressed to completion. All nine are for waste water services in order to comply with the requirements of the UWWTD. These waste water projects have the benefits of large scale in the collection and treatment of waste water and its sludge, and this ensures that the set-up costs are kept to a reasonable proportion of total cost. The initial costs and external fees, pre-contract, both for the

authorities and the competing consortia can be substantial. These initial expenses include legal, due diligence and capital commitment fees. Such costs tend to make PPP inappropriate for smaller projects.

Each authority considers the type and quality of service to be secured over an average concession period of around 25-30 years. They invited private sector responses, which are then compared with the best traditional public sector procurement option. The aim of this appraisal is to ensure that the authorities' service delivery and compliance criteria are met in the most effective manner and provide best value. The appraisal process and subsequent negotiation with consortia of service providers, their advisers and financiers, can be protracted (it is governed by European Union competition rules, and involves liaison with government).

A consortium usually consists of a consultant engineering and design firm, a construction contractor, and an operations company. These organisations will form a joint company for the provision of specific services to the authority. Consortium members also have the responsibility for maintenance over the contract period and accept the inherent risks of project delays, cost over-runs and volume changes caused by shifts in demand. The consortium is also required to deliver the service within tightly specified parameters.

The benefits for the partnership companies include:

- the long operating franchise with a guaranteed return if the service level agreement is met,
- the opportunity to establish or develop a presence in the Scottish marketplace.

The results of the nine projects would appear to have realised tangible benefits, which are discussed later.

iii) Operation of PPP

An essential element of PPP is the transfer of risk from the public to the private sector. This allows an authority not to record the assets or liabilities associated with the delivery of the service on its balance sheet. Once the PPP waste water treatment works have been commissioned, the authority pays the partnership companies a fee that reflects the volumetric and qualitative services provided to the authority for that period.

This fee is an operational expenditure item for the water authority although the charge reflects the operating, capital and financing costs of the consortium which delivers the service.

The consortium's books and records are open to inspection by the authority to verify the fees and ensure compliance with all contracted obligations. For the duration of the contract the assets adopted, constructed or modernised are in the ownership of the consortium. The water authority leases the land upon which the assets are located to the consortium. At the end of the contract all assets revert to the authority, and are required to be in a fully operable condition.

Each of the PPP contracts provides for the indexation of fees. These are variable in line with annual inflation indices, but apply only to costs excluding interest, funding costs and depreciation. The consortium will bear 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, there would be a renegotiation of the fee. There is also a provision in the agreements that 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. The onus would be on the contracting authority to monitor closely the delivery of service and ensure that benefits of any extra efficiency are shared between the concession holder and the customer.

iv) Customer benefits

The principal benefits to customers are:

- the provision of improved waste water treatment to secondary and tertiary levels fully compliant with EU standards, and in some cases primary level where none existed before;
- quicker delivery of the service;
- more cost effective construction and delivery of service;
- charges that are variable and reflect the annualised costs of the service used.

The Transport and Environment Committee 9th Report 2001 contains details of the eight projects fully signed up to 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 are 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.
- 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 there is significant cost 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 efficient whole life management of the project that will principally differentiate PPP from current investment delivery within the water authorities.

The annual cost of the services provided will in the future represent a major component of the costs incurred by the authorities and therefore in future bills. In their evidence to the Transport and Environment Committee the authorities claimed that the use of PPP to comply with EU standards, rather than the conventional procurement options, has reduced the increase in revenue required by the water industry by approximately £33 million per annum¹. This is equivalent to about 4% of customers' bills (or nearly £10 for the average household) at today's prices. The savings achieved have been estimated in each project and are summarised in Table 17.1 below:

Table 17.1: Savings per annum 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 provides the same services at lesser cost the PPP route is 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.

¹ Representing the claimed saving in annualised capital and operating costs, in the authorities' evidence to the Transport and Environment Committee.

b) PPP projects in progress

The eight signed PPP contracts, together with the ninth contract planned to be signed later this year (for the Moray Coast project), represent a capital investment on behalf of customers of around £550 million, which contrasts with an estimated investment of over £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 therefore are not comparable on an aggregate basis, but only when the actual service delivered and the construction of assets is taken into account. The relative efficiency of each project is discussed below. In large part this will reflect the cost efficiency negotiated for the construction and operation in each area. The current schemes are complex and involve the development and improvement of sewerage mains, pumping stations, storage facilities, treatment works, outfalls and sludge treatment facilities. The nine projects will be in operation by the end of 2002-03 and will process over 80% of the total waste water of Scotland. PPP projects will, therefore, account for virtually all of the waste water treatment in non-rural areas of Scotland. The sewerage needs of rural areas are likely to be met by projects procured in the traditional way.

The projects within each authority are outlined in Table 17.2. The table also shows the projected fee payable to each consortium after the facility becomes fully operational.

Not only is the design of the projects tailored to meet local conditions, there are also some important differences in what has been agreed between the contracting parties. The most obvious is that in the three projects contracted by the West of Scotland Water Authority, operational staff from the authority will work in the waste water treatment works and continue to be paid directly by the authority. These costs are not included in the costs quoted above. The water authorities also continue to pay local authority business rates directly, since there is no benefit from risk transfer in having a consortium pay this directly. Table 17.2 therefore does not include business rate costs still incurred by the contracting authority.

There are also costs related to insuring and maintaining the assets transferred to PPP schemes which cease to be direct costs to the Authority (East of Scotland Water Authority transferred £30 million of treatment works). Assets and equipment which become redundant as a result of the PPP may be closed and sold. This will have 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.

Table 17.2: PPP projects

Project name: Company name	Contract Signed	Duration years ²	Annual fee in 2002-03	
East of Scotland Water Authority				
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd		1999	30	£25m
Levenmouth: Caledonian Environmental Services Ltd		2000	40	£5m
North of Scotland Water Authority				
Highland (Fort William and Inverness): Catchment Ltd		1996	25	£9m
Tay: Catchment (Tay) Ltd		1999	30	£17m
Aberdeen: Aberdeen Environmental Services Ltd		2000	30	£13m
Moray: Catchment (Moray) Ltd	To be determined		30	£8m
West of Scotland Water Authority				
Daldowie/Shieldhall: SMW Ltd		1999	25	£16m
Dalmuir: Scotia Water UK Ltd		1999	25	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd		2000	30	£12m
Scotland total per annum				£112m

² Duration period may run from the contract date or from the date of service provision, depending on the contractual terms.

c) Financial and efficiency consequences

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 comments focus on the relative merits of the public and private sectors in general. Whilst 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 the PPP has achieved value for money, for customers. The evidence suggests that these schemes have all been delivered at a cost for customers much lower than would have been achieved by the three authorities under traditional procurement.

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 (see Chapter 7).

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 the next chapter, I discuss the results of my analysis of operating cost efficiency. In general terms, my analysis shows that operating costs in Scotland are currently approximately double what it 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 procurement.

If the Scottish industry can make the significant operating cost reductions that I target, it may be worthwhile for the industry to revisit its arrangements with the PPP consortia. It may be possible to reduce the inefficiency share that went to the consortia, once the industry in Scotland can demonstrate that it would operate the assets more efficiently than the originally agreed operating cost. There may be some benefit to customers in the next review period from renegotiation of existing PPP contracts. It would not however be available earlier as superior operating cost efficiency to the PPP is not targeted prior to 2006.

One of the most enduring benefits of the PPP contracting experience may be the transfer of some management and financial skills. This experience will be essential in helping prepare the authorities for the challenges that lie ahead in delivering value for money to the customer. This experience could help develop some more general competences that were highlighted as areas for attention during the Information Project. These include strategic planning, whole-life cost appraisal, project evaluation and risk assessment.

d) Current and future challenges

Successful management of a concession has to be pro-active. There will be on-going challenges that will need to be resolved quickly and effectively if both authority and contractor are to remain committed to the project. The customer could suffer if either party becomes at all reluctant to meet both the letter and

the spirit of its obligations. The challenge of delivering innovative value for money solutions continues in order to minimise costs to customers. These apply equally to both current PPP projects and other possible projects.

i) Current PPP projects

On-going management time and effort by the authorities will be required in areas, which include:

- monitoring performance and delivery of service,
- negotiating sharing of profit windfalls,
- reducing volumes for treatment by limiting water leakage into the works.

There may be options available earlier than 2006 to reduce the operating costs of PPP. While I have not included any such benefit in my price limits, reductions in financing costs may have left PPP consortia with an unexpected benefit. Interest rates have fallen considerably since the majority of the PPP projects were negotiated. Since each of these projects is highly leveraged (i.e. there is little equity invested and most of the funding is borrowed) there may be an opportunity for the consortium to refinance and to realise a lower cost of capital. The reduction of an interest rate by even a quarter of one percent can result in an increase in the net present value of the current projects of £35 million. It would seem appropriate that the authority and the customer should benefit if such an opportunity exists. The opportunities for sharing such windfalls was highlighted by a UK Parliamentary examination. The UK Government has stated that a minimum of 30% of any benefit should be returned to the public sector client. There are good reasons, therefore, why the board of the authority should ensure that such opportunities be monitored on an ongoing basis.

ii) Other possible projects

The water authorities may continue to see advantages in PPP for the completion of large capital projects, especially where significant innovation may be possible. In Chapter 19 I discuss the importance of innovation and procurement to the achievement of capital efficiency. That chapter highlights in Scenario C of my risk analysis other ways of reducing delivery and operating cost risks which do not involve long-term concessions and asset transfers to the private sector. Notwithstanding these options, however, traditional PPP may

remain attractive in areas such as:

- sludge disposal;
- new water supply;
- retail services, including customer billing and debt management;
- technical support services, such as information technology, laboratory services and so on.

e) Conclusion

PPP appears to have offered reasonable value for money for customers in the projects signed to date described above. It may have application in other areas, but it is important that the value for money test is rigorously and appropriately applied. The major benefit to PPP is the innovation in solutions and service delivery that appears to result. In general, customers are interested only in the delivery of the service. They will hold the water authority, not the private contractor, to account. It is therefore essential that the water authority pro-actively manages its contractors. It is further to be hoped that lessons on project management and delivery and assessment of whole life cost will also be learned by the water authorities.

The public sector model envisaged for the industry in Scotland needs to be sufficiently flexible in order to embrace both traditional and the innovative solutions that will be required to ensure that value for money is achieved for customers. This is a subject to which I will return in Chapter 26.

Section 4: Chapter 18

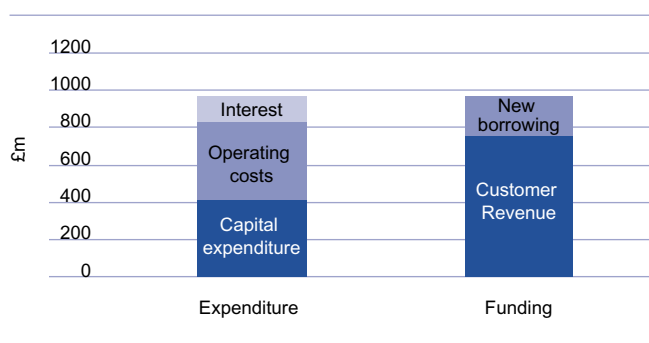
Costs: Operating Expenditure

a) The importance of operating expenditure efficiency

This chapter is one of the key elements of this Strategic Review of Charges. The methodology that has been used to generate the results discussed in this chapter was presented in Chapter 7. This chapter begins with a brief summary of the importance of operating efficiency and a comparison of current performance in Scotland with that in England and Wales. The rest of the chapter describes the application of the efficiency calculation method. Achievability of the operating efficiency targets is also set out. The chapter ends with a review of the impact of the targets on bills and the sensitivity of the investment programme to the achievement of those targets.

Operating expenditure makes up a significant proportion of the total expenditure of a water authority, as shown in Figure 18.1¹:

Figure 18.1: Scottish water industry expenditure and funding 2000-01



Operating costs form a critical part of any review of water industry expenditure. I have taken pains to ensure that my analysis of operating expenditure is based on the best methods available, uses reliable information and is as robust as possible.

The results of the analysis of operating expenditure have had a significant impact on other parts of this Review. My views on competition, affordability, incentives, and, in particular the outlook for prices over the next decade, have all been influenced by the potential for savings in operating costs.

Firstly it is important to define what I mean by efficiency. Cost cutting is not efficiency. Efficiency is about reducing costs, but reducing costs *and* maintaining or improving levels of service to customers.

Currently, inefficiency in operating expenditure is costing domestic customers an average of around £70 per household per year. In other words, if the water industry in Scotland operated at the same level of efficiency as in England, household bills could be, on average, £70 less for the service currently provided. It is, clearly, not in customers' interests to be paying bills that are unnecessarily high. The targets proposed in this Review therefore aim to remove, as far as possible, the current operating inefficiency. In order to set the target, I have taken full account of:

- the extent of the efficiency gap,
- the need to ensure that customer charges are as affordable as possible,
- the speed with which it should be possible to close the efficiency gap.

The water and sewerage service in Scotland is unlikely to have an affordable and sustainable future in the public sector unless the proposed targets are achieved. The reaction in the North of Scotland to the significant increase in charges in 2000 is a clear reminder that customers, above all else, are concerned about the cost of the service. It is not likely that the average household in Scotland will be prepared to pay over £150 extra to justify an inefficient public sector supplier². The efficiency targets minimise the increases in bills required to fund the huge investment programme. Equally important, efficiency will be the best defence to competition and will ensure that competition will bring only benefits to customers.

My analysis has examined in detail the degree of improvement in operating efficiency that best practice in England and Wales would indicate. I have sought to determine the pace and extent of progress that can be achieved, given the right organisation, management and incentives. I have been careful in deriving targets that are supported by practical examples of achievement. I have concluded that an 80% closure of the efficiency gap would be a challenging but fair target.

This target would reduce annual operating expenditure by 33% on average, across Scotland, by 2005-06. This equates to an annual saving of some £136 million. My 2005-06 target would reduce customers' bills by £62, on average. Over the Review period, a total of £400 million is made available for investment that would otherwise have had to come from customers.

¹ Based on 2000-01 audited accounts for each authority.

² Impact on average household of not achieving operating and capital cost efficiency targets.

i) Summary comparison with England and Wales

Efficiency is often defined in terms of inputs and outputs. Inputs are money, resources and effort, whilst outputs are quantity and quality of goods or services produced. For the water authorities, the outputs are making sure that they meet:

- agreed environmental standards,
- agreed public health standards,
- the Health and Safety requirements of employees and public,
- improvements in quality and continuity of service to customers, including agreed improvements,
- growing demands of existing and new customers.

The record of the water companies in England and Wales is one of improved delivery of these and other outputs, whilst at the same time consistently and significantly reducing their operating expenditure. Improvements in outputs are clearly demonstrated in Ofwat's annual reports on levels of service and on leakage and water efficiency. Chapter 22 discusses the improvements in level of service that have been delivered over the past ten years by the water and sewerage companies in England and Wales. This track record makes the companies an appropriate and challenging benchmark against which to compare the performance of the water authorities in Scotland.

The water authorities do not compare well with their peers in England and Wales. Table 18.1 reproduces the operating efficiency league table for the privatised water companies. If the Scottish authorities and the proposed Scottish Water were added to this league, they would take the bottom positions.

The position of the Scottish industry is calculated by running the standard Ofwat econometric models using water authority information.

Ofwat also produces league tables of higher level benchmarks: volumetric and unit operating costs and unit operating costs per billed property.³ Table 18.2 and Table 18.3 again highlight the poor rankings of the Scottish water authorities and the proposed Scottish Water.

These comparisons all indicate that the Scottish water authorities incur much higher operating costs than the privatised companies in England and Wales. These

Table 18.1: Relative operating efficiency 1999–2000

Company	Water Band	Water Rank	Sewerage Band	Sewerage Rank
Anglian	A	5	C	4
Dŵr Cymru	D	10	D	10
North West	B	7	C	7
Northumbrian	A	2	C	9
Severn Trent	B	8	C	5
South West	C	9	C	8
Southern	A	3	C	6
Thames	A	4	A	2
Wessex	A	1	A	1
Yorkshire	B	6	B	3
East	E	12	E	13
North	E	11	E	12
West	E	13	E	11
Proposed Scottish Water	E	11	E	11

comparisons, however, do not take into account the geographical, demographic and other differences in Scotland that also influence the cost of providing a water and sewerage service. A key part of the analysis of operating expenditure efficiency therefore involves a detailed examination of the effects of such regional variations on costs.

b) Current situation

i) Gap between recommendation and present

The water authorities are currently positioned well behind their potential competitors in England and Wales. Unfortunately, the gap has been widening. Benchmarking must look ahead, and assess anticipated improvements by competitors. This is in the interest of the authorities' customers, who should not have to pay for inefficient operation of their water and sewerage services. Figure 18.2 illustrates recent trends in operating cost in Scotland and in England and Wales. The level of operating cost shown in this figure has been adjusted to reflect improvements in the levels of service provided.

Details of operating expenditure for the three Scottish authorities are available from their first year of operation, 1996-97. Comparable figures from before 1996-97 are not available. The Regional and Islands Councils, which operated the water and sewerage services prior to 1 April 1996, had different cost

³ When volumetric unit costs are compared, the authorities' relative positions, and especially that of East of Scotland Water Authority, are distorted by the large volumes associated with industrial customers and low levels of treatment in Scotland. These additional volumes can be pumped and treated at low marginal cost.

Table 18.2: Volumetric unit operating expenditure (not including depreciation) 1999–2000

Company	Water delivered per cubic metre	Company	Sewage collected per cubic metre
Northumbrian	26p	Thames	21p
Wessex	26p	Wessex	24p
Southern	28p	Northumbrian	25p
Thames	29p	Yorkshire	27p
Severn Trent	30p	Severn Trent	30p
Anglian	31p	Southern	30p
North West	31p	North West	31p
Yorkshire	31p	Anglian	33p
East	31p	Dŵr Cymru	37p
South West	36p	South West	38p
Proposed Scottish Water	39p	East	39p
Dŵr Cymru	44p	Proposed Scottish Water	42p
North	44p	North	42p
West	44p	West	45p

allocation practices and it is not possible to determine exactly the level of operational and capital costs incurred.

Figure 18.2 shows that, generally, underlying operating expenditure (base service expenditure, as defined in Chapter 7), has, until recently, increased even after adjustments to remove the effects of annual inflation. Overall, the underlying real increase between 1996-97 and 2000-01 is 10%.

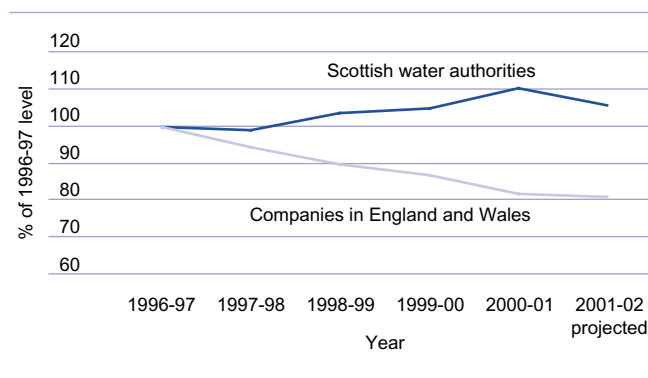
Comparable figures reported by the water and sewerage companies in England and Wales show a marked reduction, averaging 18%, over the same period. The recent trend has, however, begun to show a marked improvement.

My comparison of base service operating expenditure depends on assessed allocations of costs between base service and improvements. I have assumed generous

Table 18.3: Unit operating expenditure (not including depreciation) per property billed 1999–2000

Company	Water service per property	Company	Sewerage service per property
Southern	£55	Thames	£42
Northumbrian	£56	Wessex	£42
Wessex	£57	Northumbrian	£44
Severn Trent	£58	Yorkshire	£45
North West	£59	Severn Trent	£50
Yorkshire	£59	Southern	£52
Anglian	£65	North West	£54
Thames	£67	Anglian	£61
South West	£69	Dŵr Cymru	£62
East	£79	South West	£65
Dŵr Cymru	£88	East	£67
Proposed Scottish Water	£91	Proposed Scottish Water	£74
North	£93	North	£75
West	£100	West	£79

Figure 18.2: Trends in base operating expenditure since 1996-97



allocations of extra operating cost to reflect the large investment programme of the authorities. However the audited accounts have shown a widening gap in underlying operating expenditure between the Scottish authorities and their English and Welsh counterparts. It is clearly encouraging that the industry has recently begun to improve its efficiency. This Review seeks to ensure that the industry builds upon recent progress. This would clearly be in the interests of customers.

ii) Likely gap between recommendation and 2005-06

The water and sewerage companies in England and Wales continue to make good progress towards outperforming Ofwat’s challenging efficiency targets for operating costs. Reported total operating expenditure in 2000-01 for the water and sewerage companies in England and Wales was already 4% below that year’s target figure. Some companies were more than 10% below the target level of operating cost.

It is important to benchmark the authorities against the leading, rather than average or poor companies. I therefore chose ‘comparator companies’, which perform well on relative operating efficiency, and which are broadly similar geographically and demographically. This selection is described in Chapter 7.

The comparator companies are Northumbrian Water and Yorkshire Water, both of which bear similarities to East of Scotland Water Authority and West of Scotland Water Authority, and South West Water and Welsh Water, where there are some similarities with North of Scotland Water Authority. My revisions

Table 18.4: Operating expenditure efficiency gap in 2000–01

	Relative efficiency	Efficiency gap as % of operating expenditure
Northumbrian	91%	–
South West	94%	–
Yorkshire	92%	–
Wessex (leader)	81%	–
East	166%	–
North	138%	–
West	167%	–
Scotland	158%	–
		–
East vs Northumbrian		45%
East vs Yorkshire		45%
North vs South West		32%
West vs Northumbrian		45%
West vs Yorkshire		45%
Scotland vs Northumbrian		42%
Scotland vs Yorkshire		42%
Scotland vs South West		40%

to Ofwat’s models have ensured that I can make robust like-for-like comparisons of relative efficiency across all companies - notwithstanding some of the extremes of Scottish geography.

The revised econometric models still demonstrate a worrying trend. The three water authorities lag behind their comparator companies considerably. The extent of the efficiency gap is illustrated in Table 18.4. This compares the latest reported operating expenditure for each authority with that of the comparator companies, assuming that they are on track to meet Ofwat’s targets. The picture painted is slightly over-optimistic, since the companies are in fact outperforming those targets.

The comparisons show the extent to which operating expenditure is greater, or less, than the level predicted by my revised Ofwat models. The efficiency gap in 2000-01 between the authorities and the comparators is expressed in Table 18.4 as a percentage of the authorities’ reported operating expenditure. This allows me to illustrate the degree of cost reduction required to close the current efficiency gap.

Table 18.5: Potential operating efficiency gap by 2004-05

	Relative efficiency	Efficiency gap as % of operating expenditure
Northumbrian	83%	–
South West	81%	–
Yorkshire	88%	–
Wessex	78%	–
East	166%	–
North	138%	–
West	167%	–
Scotland	158%	–
East vs Northumbrian		50%
East vs Yorkshire		47%
North vs South West		41%
West vs Northumbrian		50%
West vs Yorkshire		47%
Scotland vs Northumbrian		47%
Scotland vs Yorkshire		44%
Scotland vs South West		48%

When operating efficiency targets agreed between the England and Wales companies and Ofwat for the current regulatory period (to 2004-05) are taken into account, the size of the potential efficiency gap widens. Table 18.5 shows the potential operating efficiency gap by 2004-05 if comparator companies just meet Ofwat's targets.

My assessment of the efficiency gap for each authority is the lower of the numbers, where more than one comparator is used.

Even in the unlikely event that the companies fail to beat Ofwat's targets, it could be argued that the figures above still understate the efficiency gap. This is because the water and sewerage companies incur the costs, within the benchmarked figures, of leakage targets and household metering. They also deliver better levels of customer service.

c) Method used to assess targets for operating expenditure

Chapter 7 describes in detail how the targets for improvements in operating expenditure efficiency were determined. Essentially, the method relies on very detailed benchmarking of each authority with England and Wales. The key features of the approach were as follows:

- Obtain full, detailed financial and technical information for each company in England and Wales, using annual accounts and Ofwat's June Return CD-Rom.
- Use annual accounts and my WIC Annual Return to collect similar information for each authority.
- Analyse detailed information about the:
 - geography,
 - demography,
 - customers of the authorities,
 - underground pipes and sewers,
 - treatment works,
 - raw water sources and other facilities,
 - volumes of water produced,
 - amount of sewage treated,
 - amount of pumping required.
- Use that information to identify comparator companies in England and Wales with similar operating environments to the authorities.
- Use Ofwat's published econometric models as the principal tool for assessing the performance of each authority, relative to the privatised companies.
- Adapt Ofwat's models to take into account Scottish conditions.
- Run the adapted Ofwat models on the full Great Britain dataset to quantify relative costs on a like-for-like basis.
- Collect specific information from each authority regarding particular local circumstances that affect operating expenditure (for example the additional costs of serving island communities).
- Make due allowance for these circumstances in the comparisons of relative costs with England and Wales.
- Quantify the current efficiency gap between each authority and similar water and sewerage companies.
- Calculate the efficiency gap that would exist in 2005 given the targets agreed between Ofwat and the companies in the 1999 Periodic Review.
- Calculate the reduction in operating expenditure that would

Table 18.6: Calculation of allowable operating expenditure

	East	North	West	Scottish Water
2000–01 total operating costs	£226.1m	£182.8m	£304.7m	£713.6m
less: depreciation	£50.0m	£45.4m	£66.0m	£161.4m
less: interest	£47.7m	£27.6m	£53.8m	£129.1m
less: PPP	£12.8m	£9.3m	£0.0m	£22.1m
controllable operating expenditure	£115.6m	£100.5m	£185.0m	£401.0m
less: exceptionals	£9.5m	£0.0m	£0.0m	£9.5m
less: other one-off costs	£4.6m	£8.7m	£12.5m	£25.8m
underlying controllable operating expenditure	£101.5m	£91.8m	£172.5m	£365.8m
Efficiency gap (%)	47%	41%	47%	44%
Degree of closure of gap for each year (%)				
2001-02	10%	10%	10%	10%
2002-03	40%	40%	40%	40%
2003-04	60%	60%	60%	60%
2004-05	70%	70%	70%	70%
2005-06	80%	80%	80%	80%
Total % reduction in controllable costs by 2005-06	38%	33%	38%	35%

close the efficiency gap, and bring each authority to the level of the comparator companies by 2005-06.

- Confirm the required reduction, using an alternative modelling approach, again based on detailed information from both Scotland and England and Wales.
- Assess the target, i.e. to what degree and at what pace the efficiency gap could be closed, given the right conditions, by reference to previous experience in the private water sector and elsewhere.
- Assess the need for additional operating expenditure funding to cover growth and improved quality in the service provided by each authority (new operating expenditure).
- Calculate the required operating expenditure.

The approach taken for this Review is fully consistent with that used by Ofwat to determine the operating efficiency targets for its price review in 1999. This approach was independently endorsed by the Competition Commission.

d) Application of the method

I applied the methodology summarised above to complete the benchmarking analysis. This benchmarking allows me to

assess the level of operating expenditure required by each authority.

I started by determining the actual controllable operating expenditure of each authority. Controllable operating costs are those that management are able to influence in the short to medium term. I subtracted the costs associated with depreciation, interest, and the costs of the PPP services, from reported total operating costs in the audited accounts and my Annual Returns. I then made adjustments to this controllable operating cost to correct for exceptional and one-off costs. This gave the underlying operating expenditure.

By subtracting the required efficiency target for each year, this allowed me to calculate the allowable operating expenditure for each year, before any level of service improvement. Finally, I added the new operating expenditure required to deliver efficiently the level of service improvement in each year.

These calculations are shown in Table 18.6 for the three authorities and for the proposed Scottish Water.

Table 18.7: Summary of savings of operating efficiency target

	2002–03	2003–04	2004–05	2005–06
Scottish Water	£63.0m	£96.9m	£115.9m	£135.8m
East of Scotland Water Authority	£13.1m	£20.2m	£24.2m	£28.3m
North of Scotland Water Authority	£14.9m	£22.9m	£27.4m	£32.1m
West of Scotland Water Authority	£35.0m	£53.9m	£64.4m	£75.4m

e) Results

i) Efficiency targets

I calculated the operating efficiency targets with a view to closing, by 2005-06, 80% of the efficiency gap between each authority⁴ and a benchmark water and sewerage company. I set an intermediate efficiency target for each year. These targets increase year on year to the 80% required in 2005-06. The proposed targets are summarised in Tables 18.7 and 18.8. These tables show the savings in millions of pounds per year, relative to 2000-01, and the equivalent savings in terms of average household bills.

Some commentators have criticised the benchmarking process used by Ofwat to calculate efficiency targets. I am, however, satisfied that my method is robust, as Ofwat's models have been described as being "subject to extensive external scrutiny, more so than any other models used across government" (Cabinet Office Performance and Innovation Unit, *Adding it up* report,

January 2000). No benchmarking analysis can ever be entirely accurate, but errors can be minimised by ensuring that the information being compared has been consistently defined and collected. The consistent structure of my WIC Return and the Ofwat 'June Return' is a strength of this analysis.

It could be suggested that it is not sound to compare the performance of a Scottish authority with a regional privatised company in England. Such an argument would not be sound for two reasons. Firstly the econometric models take account of many factors of scale and rurality. Second, and more importantly, I have adjusted the results to take into account Scottish conditions, where appropriate, and I have also examined in detail the evidence presented to me by the authorities on the impact of local factors on costs. I believe that I have made full and appropriate allowance for all these factors. I have a high degree of confidence that the targets are robust, given the level of detail and consistency in my approach to benchmarking the authorities. The margin of error in the models is less than 5% and I consider that this confirms the reliability of the targets.

ii) Allowable operating expenditure

Table 18.9 summarises the allowable operating costs for each of the current authorities and for the proposed Scottish Water. I have applied the targets to the authorities' 1998-99 levels of operating costs.

iii) Additional operating expenditure allowance for service improvements

As indicated earlier, the water authorities are not expected to improve service beyond the benchmark level without an additional allowance of operating cost. I therefore calculated the operating expenditure required by each authority to enable them efficiently to fund the operation of the new assets

Table 18.8: Summary of impact on bills of operating efficiency targets

	2002–03	2003–04	2004–05	2005–06
	£/household	£/household	£/household	£/household
Scottish Water	£29	£45	£53	£62
East of Scotland Water Authority	£19	£29	£35	£41
North of Scotland Water Authority	£32	£48	£57	£67
West of Scotland Water Authority	£35	£54	£64	£74

⁴ The rationale for the 80% is discussed later in this chapter.

Table 18.9: Summary of allowable operating expenditure

	2002–03	2003–04	2004–05	2005–06
Scottish Water	£321.8m	£297.5m	£288.4m	£278.7m
East of Scotland Water Authority	£94.0m	£89.6m	£88.4m	£87.1m
North of Scotland Water Authority	£81.6m	£76.0m	£74.0m	£71.8m
West of Scotland Water Authority	£146.2m	£131.9m	£126.0m	£119.8m

created to improve service. The Quality and Standards process (see Chapters 4 and 15) has determined the improvements in environmental and public health performance that have to be implemented in the period 2002-06. In some cases, capital investment will deliver the required improvements to levels of service without any additional operating expenditure (e.g. a mains replacement project), but in many instances there are implications for operating costs.

The benchmark targets compare both the service delivered and the cost for the service that is delivered. This favours the authorities in Scotland, which are assumed in the calculation of the targets to deliver the same level of service as the privatised comparator company. I have not attempted to estimate how much lower companies' costs would be if they did not provide the higher standards of service.

I have asked the authorities to examine their investment programmes for the expected impact on operating costs. I have reviewed and compared the authorities' estimates with comparable figures for England and Wales. I can therefore be confident that I give credit only for a genuine improvement in the level of service that has not already been included in the benchmark. I have also reviewed these estimates to ensure that they are consistent with fully efficient operation of new plant and equipment.

There are several examples of improvements in levels of service for which the authorities could receive an additional operating cost allowance. These include:

- improved responses to customer queries and complaints,

- chemicals and filter media for more effective water purification,
- costs of services to customers in new housing developments,
- operation of processes to reduce pollution levels in sewage
- tankering and safe disposal of sewage sludge previously disposed at sea.

I expect that additional operating expenditure will be required year on year, as a result of the authorities' investment programmes. In England and Wales, there was a similar pattern during the 1990s. Customers both in Scotland and in England are keen to see improvements to the environment and to public health. These improvements will incur both capital and operating costs. The additional operating costs of treating sewage required by the Quality and Standards programme (and not covered by PPP) has been calculated. The extra allowable operating expenditure is outlined in Table 18.10. There is no extra allowance for customer service or water quality because, in each case, the benchmark company was delivering a higher level of service in 1998-99 than the Scottish industry will in 2005-06.

Table 18.10: Allowable operating expenditure for improvements in levels of service

	2002–03	2003–04	2004–05	2005–06
Scottish Water	£2.47m	£4.56m	£6.76m	£9.02m
East of Scotland Water Authority	£0.83m	£1.69m	£2.60m	£3.55m
North of Scotland Water Authority	£0.86m	£1.28m	£1.71m	£2.14m
West of Scotland Water Authority	£0.78m	£1.58m	£2.44m	£3.33m

iv) An alternative approach

Given the scale of the operating efficiency gap and the proposed targets, I considered it prudent to examine alternative approaches to benchmarking. I had to be convinced that the results of the econometric models were indeed accurate. I therefore developed an alternative analytical model. This alternative model is described in Chapter 7. I also compared

Table 18.11: Comparison of alternative estimates of the operating expenditure efficiency gap

	Efficiency gap as percent of operating expenditure		
	Econometric models	Alternative model	Unit cost per property
	% gap	% gap	% gap
East vs Northumbrian	50	50	40
East vs Yorkshire	47	49	32
North vs South West	41	37	32
West vs Northumbrian	50	52	51
West vs Yorkshire	47	52	43
Scotland vs Northumbrian	47	48	47
Scotland vs Yorkshire	44	47	38
Scotland vs South West	48	43	48

the results of the econometric models with some high level comparisons of unit costs. These alternative analyses all agree well with the results of the adapted econometric models. A summary of my results is shown in Table 18.11.

Taken together, these results indicate firmly that the scale of the efficiency gap between the Scottish authorities and the water and sewerage companies in England and Wales has been accurately and robustly assessed. The most reliable results are those from the econometric models, which show the efficiency gaps to be within 5% of results derived by the alternative model, and of a similar order to the results of the unit cost comparisons.

f) Recommendation

My aim is to set a realistic but challenging target. I believe that the target has to be realistic because it is not in customers' interests to set a target that cannot be achieved. Customers should, however, not have to pay any more than is absolutely necessary. To close 80% of the efficiency gap with England and Wales in just five years may seem ambitious, but it is vital to put this into perspective. If the Scottish industry achieves this target, the industry would still be less efficient in 2005-06 than Welsh Water was in 2000-01 (the company was by far the

least efficient of the privatised companies, at the time of the last Periodic Review). The actual outcome in 2005-06 may be worse because there is likely to be significant outperformance of their targets by the privatised companies during their current regulatory period. In each of the previous regulatory periods, the companies have significantly outperformed expectations and based on recent reported results, would appear likely to do so again.

There are a number of other material reasons (apart from the likely outperformance of the privatised companies) why the targets are realistic and achievable and not aspirations. These reasons can be summarised as follows:

- The comparator companies (Yorkshire Water, Northumbrian Water, South West Water) used in the benchmarking, whilst good performers, are not at the frontier of operating efficiency (the leading company is Wessex Water).
- Spend to Save funds were not included in price limits set by Ofwat and were therefore not available in advance from customers in England and Wales.
- Scottish management has the advantage of being able to learn from the experience of the companies in England and Wales.
- Current service level requirements in England and Wales in respect of leakage targets and metering of new homes do not apply in Scotland, but the proposed targets provide funding at English and Welsh levels.
- The remaining efficiency gap of 17% (or more) will still represent a significant cost burden on customers in 2005-06.
- Alternative benchmarking techniques suggest that the efficiency gap could actually be larger than assumed.

The implications for the authorities are serious, because a substantial reduction in costs will be needed to achieve the proposed targets. The implications for customers are also serious. Failure to close the gap would mean further delays to the investment programme and even higher bills for customers. I have therefore examined the achievability of the targets in detail. Achievability depends upon the extent of, and the time available for, implementation of the target. My analysis shows that, although the monetary gap appears very large, the past achievements of the water and sewerage companies in England would certainly support this size of target. The results of my analysis are discussed below.

I have no doubt that Scottish Water would be capable of achieving my proposed targets, and that revenue caps should assume that they are achieved, if the merger proceeds. However, if the authorities retain their existing structure and there is no merger, then I would wish to be more prudent in my assumptions. My calculations of the revenue caps under the existing structure therefore assume that my targets are not fully achieved, and that closure of the efficiency gap would only reach 50%, instead of the target 80%.

i) Proposed Scottish Water proceeds

In the event that the creation of Scottish Water proceeds, my proposed targets in this Review, which I base on an 80% closure of the operating efficiency gap, are as shown in tables 18.12 -18.15.

ii) Existing structure retained

In the event that the existing three authorities are retained, my proposed targets, assuming 50% closure of the operating efficiency gap, are as shown in Tables 18.16 - 18.18.

Table 18.12: Summary of operating expenditure efficiency targets for Scottish Water

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£15.3m	£63.0m	£96.9m	£115.9m	£135.8m
Annual % real reduction	4%	13%	10%	5.5%	5.5%
Allowable operating expenditure	£360.1m	£321.8m	£297.5m	£288.4m	£278.7m

Table 18.13: Summary of operating expenditure efficiency targets for East of Scotland Water Authority in the event that the proposed merger proceeds.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£3.2m	£13.1m	£20.2m	£24.2m	£28.3m
Annual % real reduction	3%	9%	7%	4%	4%
Allowable operating expenditure	£101.3m	£94.0m	£89.6m	£88.4m	£87.1m

Table 18.14: Summary of operating expenditure efficiency targets for North of Scotland Water Authority in the event that the proposed merger proceeds.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£3.6m	£14.9m	£22.9m	£27.4m	£32.1m
Annual % real reduction	4%	12%	9%	5%	5%
Allowable operating expenditure	£90.5m	£81.6m	£76.0m	£74.0m	£71.8m

Table 18.15: Summary of operating expenditure efficiency targets for West of Scotland Water Authority in the event that the proposed merger proceeds.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£8.5m	£35.0m	£53.9m	£64.4m	£75.4m
Annual % real reduction	5%	15%	12%	7%	7%
Allowable operating expenditure	£168.3m	£146.2m	£131.9m	£126.0m	£119.8m

Table 18.16: Summary of operating expenditure efficiency targets for East of Scotland Water Authority in the event that the proposed merger does not proceed.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£3.2m	£13.1m	£15.2m	£16.4m	£17.7m
Annual % real reduction	3%	9%	2%	1%	1%
Allowable operating expenditure	£101.3m	£94.0m	£94.7m	£96.2m	£97.7m

Table 18.17: Summary of operating expenditure efficiency targets for North of Scotland Water Authority in the event that the proposed merger does not proceed.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£3.6m	£14.9m	£17.2m	£18.6m	£20.0m
Annual % real reduction	4%	12%	2%	1%	1%
Allowable operating expenditure	£90.5m	£81.6m	£81.7m	£82.8m	£83.9m

Table 18.18: Summary of operating expenditure efficiency targets for West of Scotland Water Authority in the event that the proposed merger does not proceed.

	2001-02	2002-03	2003-04	2004-05	2005-06
Target	£8.5m	£35.0m	£40.4m	£43.7m	£47.1m
Annual % real reduction	5%	15%	3%	2%	2%
Allowable operating expenditure	£168.3m	£146.2m	£145.4m	£146.7m	£148.0m

g) Role of action plans

Steps have already been taken to ensure that the efficiency targets can be achieved. The Information Project (described in Chapter 3) led to the development of Actions Plans by each of the authorities. There are two elements of the Action Plans that I wish to highlight here. These are the allocation of operating costs and the adoption of a strategic approach to asset management.

The authorities have the systems available to allocate costs at a more detailed level, but this has not yet been implemented. The result is that the water authorities do not understand in any detail the costs to run particular assets or to serve particular customers. In a future competitive market, understanding of these costs will be essential. If action is not taken to develop a

better understanding of costs, achievement of the efficiency targets will be threatened.

Strategic asset management processes would also help the Scottish water industry to improve its operating cost efficiency. Asset management is not just about decisions on capital assets, it is also, critically, about establishing operating rules and procedures. This will identify savings (for example, the frequency of inspection may be much higher than required) but will also assist in developing a better understanding of operating costs. This approach will also ensure that the minimum whole-life cost drives investment and operating decisions.

If the Action Plans are to be successful they need to be clear and properly resourced. The allocation of Spend to Save resources (see Chapter 21) will be crucial. I will therefore

continue to work with the authorities to ensure progress is made in this area.

h) Implementability

i) Reducing the efficiency gap

In order to ensure that the target could be achieved within the regulatory period, I have studied the progress made by other organisations, including the water and sewerage companies, in improving their operating expenditure efficiency.

I first informed the authorities of the likely targets during the late summer of 2000 and they were confirmed in October 2000. By 2006, the end of the regulatory period, the authorities will have had over five years to address the efficiency gap.

It is not enough merely to examine the rate at which other organisations have improved. It can be demonstrated that as organisations approach the efficiency frontier, efficiency savings become progressively harder to achieve. Conversely, the less efficient an organisation, the easier it is to make the initial savings. The larger inefficiencies are more obvious to identify and simpler to correct.

I believe that much can be learnt from the experience of the privatised water and sewerage companies. The Scottish authorities have a distinct advantage because they can emulate best practice in England and Wales. It is obviously easier to make gains when others have pioneered the way; this should not, of

Table 18.19: Operating cost reductions achieved by water and sewerage companies in five years⁵

Five year real % reductions in base service operating expenditure			
	From	To	% reduction
Anglian	1994	1999	27
Dŵr Cymru	1996	2001	26
North West	1996	2001	19
Northumbrian	1994	1999	34
Severn Trent	1994	1999	21
South West	1995	2000	29
Southern	1996	2001	39
Thames	1995	2000	18
Wessex	1993	1998	27
Yorkshire	1994	1999	22

course, mean that the authorities do not seek to develop their own examples of best practice. The Spend to Save resources that are available will also be important in ensuring that targets are met.

ii) Comparisons with England and Wales

The recent history of the water and sewerage companies is useful background. Most companies' operating expenditure peaked around 1993 to 1994, and efficiencies were not tackled on a significant scale until Ofwat's 1994 price review.

There were significant efficiency gains by most companies from 1994 onwards. Other companies (such as Southern Water) lagged initially then made significant and rapid gains in the late 1990s. The pace of improvement seemed to have slowed, but Ofwat's latest targets seem to have re-injected urgency into the drive for efficiencies.

I have examined the best progress made by each of the privatised companies over a five-year period. This would be an obvious yardstick for what should be achievable targets for the water authorities. The results are outlined in Table 18.19.

The target for the proposed Scottish Water is 33% in real terms. The Scottish Water target is towards the top end of the range of previously achieved efficiencies. There are, however, three important reasons for believing that the Scottish Water targets are more achievable:

- The Scottish water industry is able to learn from the experience of the companies. The performance of the privatised companies was during a single period and therefore they did not have the same opportunity to learn from observing what had worked for their peers.
- I have allocated £200 million of Spend to Save (nearly 50% of the total operating cost to be saved during this regulatory period) from customers' charges. This is an allowance that was not available to the companies. They had to fund any costs of reorganisation and delivering efficiency by outperformance of Ofwat's targets.
- It is important to note that the efficiency gains of the water and sewerage companies, although significant, were made from a starting position that was closer to the efficiency frontier than the position of the authorities today. This is not solely attributable to the impact of privatisation, since the

⁵ Source: Ofwat CD-ROM 1999-00 and 2000-01 accounts. Performance is after adjustments for exceptional and other one-off costs.

Table 18.20: Analysis of remaining operating expenditure efficiency gap in 2005–06

Outperformance of Ofwat target by privatised companies	% cost reduction needed to match comparator companies					
	Gap closure					
	60%	70%	80%	90%	100%	110%
0%	28%	23%	17%	9%	0%	-11%
5%	33%	28%	21%	14%	5%	-5%
10%	37%	32%	27%	20%	11%	0%
15%	42%	38%	32%	26%	18%	7%
20%	47%	43%	38%	33%	25%	15%

English and Welsh water authorities before privatisation made significant efficiency gains during the 1980s.

In England and Wales, the water authorities prior to privatisation were subject to the scrutiny of Central Government and consequent budgetary pressure from the Treasury. In particular, the Water Act 1983 widened the powers of the Secretary of State to regulate and monitor the authorities' activities, and made new provisions as to the appointment of members. These members after 1983 all had significant commercial experience. One example of the impact of tighter scrutiny is that employment numbers fell by 20% between 1982 and 1988⁶. In Scotland, reported employment figures fell by 0.5% during the same period⁷. The efficiency gap between the Scottish industry today and the English and Welsh industry immediately after privatisation is of the order of 35%.

iii) Assessment of possible future efficiency gaps

In order to check my conclusion that an 80% closure of the gap was appropriate, I examined the potential impact of various targets for operating efficiency in the period to 2005-06 and compared these to the likely outcome in England and Wales at the end of the current regulatory period. Table 18.20 illustrates a range of possible outcomes, and shows that the 80% closure of the efficiency gap proposed in this Review would place the authorities well behind the likely position of the companies. The table sets out the percentage reductions in operating expenditure still required to reach the benchmark performance implied by various combinations of closure of the efficiency gap and outperformance by the privatised companies.

This sensitivity analysis demonstrates that if a target of less than 80% were set there would be a gap of over 20% in the

relative performance of the Scottish industry. Limiting closure of the efficiency gap to 70%, would leave the Scottish industry some 30% behind. This would have severe competitive consequences.

Whilst 90% closure would save customers £8 on their bills, I am doubtful whether that level of closure could be achieved during the next five years, unless the authorities contract out on a significant scale, or adopt similar levels of management and employee flexibility. My 80% target would, assuming a modest 5% outperformance by the companies, leave the Scottish industry 21% behind the companies. If I applied Ofwat's A to E banding system for relative efficiency, the authorities would, on this basis, achieve a 'D' score in 2005-06.

The 80% target would require reductions of 33% in operating expenditure. This is clearly within achievable levels, as demonstrated in the water and other sectors.

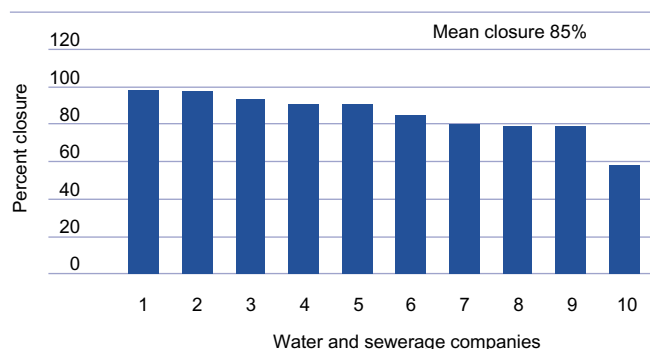
My analysis of the pace of improvement in operating efficiency by the water and sewerage companies supports the view that a closure of 80% of the efficiency gap is achievable in five years. Indeed, this is less than the average percent closure (85%) achieved by the privatised companies over their best five years. This represents a greater achievement than the target I have set in Scotland, because my analysis adopts, as the efficiency frontier, the performance achieved by the leading company in the fifth year, rather than the target set by the regulator. The performance of the companies is shown in Figure 18.3. The chart has had to be anonymised, as some of the information used was obtained in confidence from Ofwat.

The Ofwat practice is to require the companies to improve their efficiency by 1.4% each year and to narrow 60% of the gap to

⁶ See Waterfacts 1995 Table 7.1.

⁷ ditto.

Figure 18.3: Closure of efficiency gap by water and sewerage companies over five years



the frontier, rather than the benchmark company. The following table illustrates the difference between the Ofwat approach and the approach that I have adopted.

Table 18.21: Ofwat methodology compared to Water Industry Commissioner for Scotland methodology

Targeted gap	Ofwat methodology	WICS methodology
Scotland	31.3%	32.8%
East	25.1%	24.6%
North	26.8%	30.9%
West	35.7%	38.7%

In order to draw a true comparison however, I need to reduce the targets set for the industry in Scotland by my allowance for Spend to Save (see Chapter 21). This would reduce the target savings by £80 million in 2005-06.

The effect on the targeted gap is shown in Table 18.22.

Table 18.22: Ofwat methodology compared to Water Industry Commissioner for Scotland methodology on a fully comparable basis

Targeted gap	Ofwat methodology	WICS methodology adjusted for Spend to Save
Scotland	31.3%	13.5%
East	25.1%	3.1%
North	26.8%	13.0%
West	35.7%	19.9%

This shows that the challenge faced by the water authorities is less than that suggested by a superficial review of the difference between the Ofwat and WICS methodology. Even if

Table 18.23: Comparison of total efficiency target (including merger)

Targeted gap	Ofwat methodology	WICS methodology with merger and Spend to Save
Scotland	31.3%	20.5%
East	25.1%	10.1%
North	26.8%	20.1%
West	35.7%	27.0%

I add the targeted merger savings (see Chapter 20), the target for the proposed Scottish Water is still less than would be faced by a privatised company in England even before including the required annual efficiency target.

It is worth reiterating, while reviewing these comparisons that:

- I have not adjusted the expenditure of the English and Welsh companies to take account of their spending to meet mandatory leakage targets.
- I have not adjusted the expenditure of the England and Welsh companies for the costs incurred in domestic metering.
- English and Welsh companies are expected to outperform their targets.
- The proposed Scottish Water should be able to learn from the experience of the privatised companies.
- My target is calculated to a comparator company rather than the 'frontier' company.
- My alternative benchmarking suggested a higher efficiency gap than that from the revised Ofwat econometric models.

The fact that the initial position of the authorities is less favourable than that of the privatised companies should not make the targets any harder to achieve. Indeed, I have found that there is a close relationship between the initial gap and the level of cost reduction achieved by the companies in recent years. The targets that I propose in this Review are fully consistent with this relationship, as shown in Figure 18.4.

Europe Economics and Professor Nick Crafts of the London School of Economics were contracted to complete a detailed study of progress in operating efficiency in other sectors for Ofwat's 1999 price review⁸. The results of that study support the hypothesis that efficiency gains can be large and can be achieved quickly before the frontier is approached. Examples in the electricity sector, taken from Europe Economics' report, are given in Table 18.24.

⁸ *Water and sewerage industries general efficiency and potential for improvement*, Ofwat October 1998.

Figure 18.4: Reduction in operating expenditure for a given initial efficiency

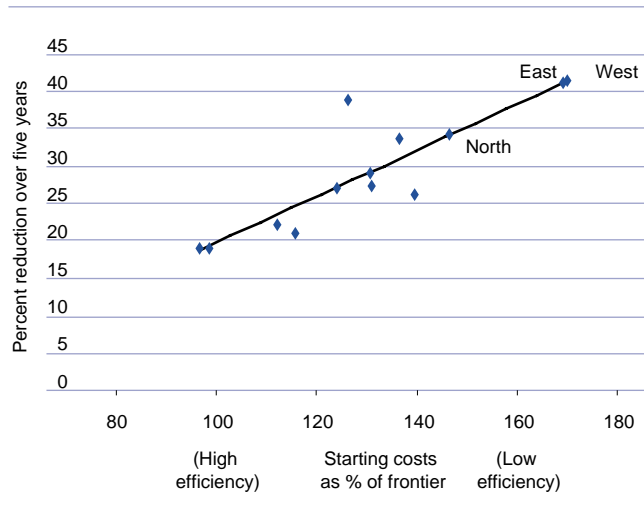


Table 18.24: Operating cost reductions achieved in the electricity sector in five years

Company	Unit operating cost reduction 1992 to 1997 (%)
PowerGen	38
National Power	31
National Grid	41
Seeboard	49
Southern Electric	43
South Wales Electricity	41
South Western Electricity	34
Northern Ireland Electricity	30

My sole interest is to promote the interests of customers. Since the industry is in the public sector in Scotland, it too should be focussed only on improving value for money for customers. As discussed in Chapters 11 and 13, relative cost position is the principal driver of the competitive position of the public sector water supplier in Scotland. This inefficiency, even if it were desirable, would not be sustainable in the medium term. Perhaps most important, I cannot advise Ministers to sanction an increase in customers' charges until all the realistic scope for efficiency has been included within the operating targets of the industry.

iv) Risks

The proposed targets imply substantial changes in the way the water authorities carry out their business. It is, therefore,

important to take account of factors that may make achievement of the targets more difficult. The authorities are planning carefully how to achieve the targets; however, plans can be delayed or planned solutions may not work. The main risks include:

- the current framework of corporate governance - this reduces accountability and internal challenge and would appear to have devalued management information;
- limited incentives for directors and employees;
- insufficient management focus on reducing cost (a revenue focus would not be appropriate);
- resistance to culture change in the organisations;
- management decisions based on limited information;
- no measurable internal targets (on service levels and costs).

It will be essential for the Scottish Executive and the industry management to address these key areas. The risks can all be minimised. However, if a change in culture is not brought about then the targets will not be met. I have taken a prudent approach to the setting of targets and believe that if a real effort to transform the industry is made, the efficiency targets will be beaten. However, given that such a large and fundamental change is required in order to achieve the targets, I consider that if the change does not occur, then the targets will be missed by a wide margin.

v) Opportunities

There is certainly scope for the authorities to outperform the proposed targets during the period to 2005-06. Significant outperformance, by say 10% or more, is also, I believe, possible⁹ but this would require a commitment to contracting out (or the development of an equivalent level of internal flexibility within the organisation). Prospects beyond 2005-06 are discussed in Chapter 39.

Outperformance of these targets should be encouraged as this would allow smaller price increases, earlier delivery of improved service to customers, and a better environment, or some combination of these.

vi) Risk analysis

In the Minister's letter to me that commissioned this Review, I was asked for a formal risk analysis. In order to deliver this

⁹ As evidenced by contracting out of operations by Glas Cymru.

analysis, I needed to understand how the risks and opportunities discussed above could affect the level of customers' bills, the level of borrowing and the availability of funds to deliver, in timely fashion, the required environmental programme and service improvements. I have, therefore, carried out a detailed risk analysis on the effects of underachieving, or exceeding, my proposed efficiency targets. This has been completed for both operating and capital costs.

My assumed risk profiles for operating expenditure are shown in Table 18.5 and 18.6.

Figure 18.5: Risk profiles for operating expenditure – Scottish Water

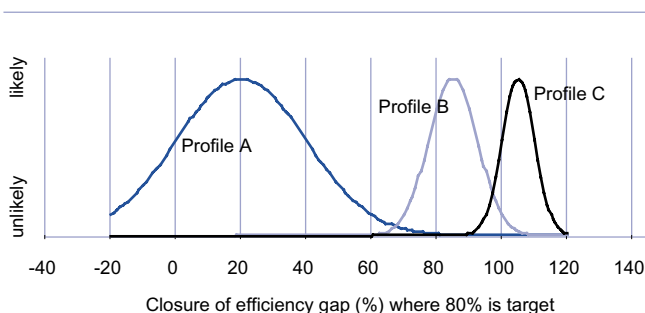
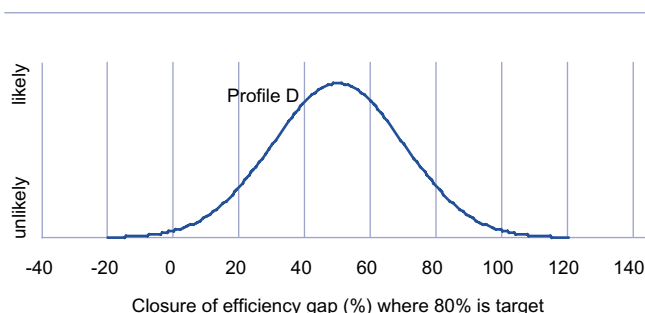


Figure 18.6: Risk profiles for operating expenditure – three authorities



These profiles depict my assessment of the relative probability of achieving a particular degree of closure of the efficiency gap, where the proposed target closure is 80%. These profiles have been developed on the basis of all of the information available to me. It therefore draws upon qualitative and quantitative information requests and upon similar information from the English and Welsh water industry and the utilities market in general.

Profile A – Scottish Water

In this scenario, I have assumed that the degree of efficiency achieved is unpredictable, and that a wide range of outcomes could occur. This happens because the key success factors noted above are not fully addressed. I believe that it is unlikely under this scenario that the proposed targets would be approached, and there is a slight possibility that the recent decline in performance could continue. Broadly, I would expect the authority to make more progress against the capital efficiency target than the operating efficiency target (see Chapter 19). I believe that the target for operating cost is more dependent on the successful transformation of the organisation.

Profile B – Scottish Water

I have assumed in this scenario that the proposed Scottish Water has addressed the key management issues outlined above. I have also assumed that this is done quickly and is a direct result of the creation of Scottish Water from the three existing authorities.

Under this scenario, the likely closure of the efficiency gap is much more predictable. I believe that given the conservative assessment of the targets, the management should be able to achieve the targets with a margin to spare and that significant under- or out-performance of the targets is unlikely. My analysis has shown that the water and sewerage companies in England and Wales have a very consistent record of performance. I cannot see any reason why this should not be repeated in Scotland.

The worst case in this scenario is broadly similar to the level of efficiency of Welsh Water at the 1999 Periodic Review. The best case is broadly equivalent to the achievement of the leading company in England and Wales by 1998-99. The management of Scottish Water has a significant advantage in that it can learn from the experience of the privatised companies.

Profile C - Scottish Water

The critical issues are addressed and there is a commitment to contracting out (or an equivalent level of internal flexibility)¹⁰. In my view, this scenario could, at one extreme, produce

¹⁰ Wessex Water has a policy to contract out very little. It has developed a very flexible internal organisational culture. This has resulted in a high level of efficiency and fewer redundancies.

efficiencies at the leading edge for the UK. The attractiveness of the Scottish market to potential contractors could well encourage very competitive pricing of any contracts. This scenario is very unlikely to fail to deliver the proposed efficiency target, because this would imply contract prices well above the norm in England and Wales.

Profile D – three authorities

This covers a wide range of outcomes, driven mainly by the degree of commitment within the authorities to achieving efficiencies. Unlike Scottish Water, where there are three distinct scenarios, I consider that in the three authority model, the degree of commitment can best be represented by a smooth spectrum of risk.

I find no compelling reason to suppose that the risk profiles A to D should be skewed in any way. I believe, therefore, that a Normal distribution seems most appropriate.

I have adopted these assumed profiles in my financial risk analysis. This uses a standard risk analysis software linked to the simple financial model described in Chapter 10. The results of this analysis are set out in Chapters 33 and 37.

i) Sensitivity

In addition to the formal risk analysis, I also conducted a sensitivity analysis of the impact of achievement (or non-achievement) of the operating cost efficiency targets on customers and on environmental outputs.

i) Impact on customers

Table 18.25 sets out the impact in millions of pounds, and as pounds on average household bills, of varying degrees of success in achieving the targets, across Scotland.

Table 18:25 demonstrates the importance of the efficiency targets for operating expenditure to customers. A shortfall in performance of just 20% of the identified efficiency gap would mean that customers pay £48 more in bills over the four years of the review period. Alternatively, an additional £100m would have to be found from public expenditure over the same period. The potential benefits if the authorities outperform the targets are also, however, considerable.

ii) Impact on the environment

If price and borrowing constraints are not to be breached, then failure to achieve the efficiency targets would delay capital investment designed to improve environmental compliance. Expressed in terms of months delay to the planned investment programme, the sensitivity of the level of achievement of the operating efficiency targets is detailed in Table 18.26.

The impact of failure to meet the operating cost targets on the capital expenditure programme is not a major area of concern. Although the programme as a whole could slip considerably, there is not likely to be any significant threat to environmental compliance. It is likely that base maintenance would bear the brunt of any shortage of revenues. This would not, of course, be in the customer interest because base maintenance has already been neglected for too long.

Table 18.25: Sensitivity of customers' bills to degree of closure of operating expenditure efficiency gap

	Degree of closure of efficiency gap by 2005–06 (%)							
	30	40	50	60	70	80	90	100
£ millions excess cost in 2005–06	84	67	50	34	17	0	-17	-34
£ millions total cost in 4 years to 2005–06	250	200	150	100	50	0	-50	-100
£ excess on bills in 2005–06	41	32	24	16	8	0	-8	-16
£ excess total on bills in 4 years to 2005–06	121	96	72	48	24	0	-24	-48

Table 18.26: Sensitivity of delays in investment programme to closure of operating expenditure efficiency gap by 2005–06

	Degree of closure of efficiency gap by 2005–06 (%)							
	30	40	50	60	70	80	90	100
Delay (months)	7½	6	4½	3	1½	0	-1½	-3

j) Monitoring the delivery of efficiencies

My Strategic Review of Charges is only the start of the regulatory process. I will continue to monitor rigorously, the authorities' progress towards delivering the reductions in costs and the improvements in levels of service. This monitoring role will be achieved through:

- regular data returns, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- a process of query, challenge and confirmation of numbers;
- rigorous analysis of current and expected progress against targets;
- reports to the authorities, to the customer and to their owner;
- the development of analytical tools that are designed to distinguish progress from gaming.

In my view, it will be necessary for all stakeholders to monitor and discuss progress against targets. This would ensure that we minimise delays and surprises. The key role of my office will be to provide the framework for information necessary to judge progress, and to conduct the rigorous checking and analysis of that information. I am confident that the framework and most of the analytical tools are already in place, but I will be striving to improve this system of monitoring over the coming months.

k) Conclusion

The efficiency targets for operating expenditure appear to be large, but they reflect the relative lack of progress in Scotland compared with England and Wales. The targets will still leave a significant gap, even in 2005-06, between the Scottish industry and the privatised companies. The public sector, with its lower

cost of capital, should deliver a cheaper, not a more expensive service to customers.

I believe that there is a very clear line between the role of the regulator and the role of the board and managers. I have no role in determining how the efficiencies are achieved. I do have a very clear role in holding the organisation(s) to account on behalf of customers. My analysis gives an accurate indication of the scope for improvement, but it is up to the authorities, using their own specialist knowledge and skills, and with external assistance where necessary, to determine how and where to deliver the improvements.

It is clear, however, that budgetary belt-tightening will not go far in closing the efficiency gap. The targets will, almost certainly, need a very significant degree of cultural change, better corporate governance, financial control, and a transformation of processes and procedures. In all these areas, there are instructive parallels and lessons to be learnt from the experience of the English and Welsh water and sewerage companies, and from other utility sectors across the UK. It is vital that the authorities draw on this experience, and take full advantage of it. The Scottish Executive, as de facto owner of the industry, can help by requiring that more detailed cost allocations be made than is the current practice. As regulator, I will certainly be looking to understand in detail the cost allocations to treatment, networks and retail services, in order to be confident that tariffs are sustainable in the medium term and are in the broader customer interest.

It is instructive to note that, where water and sewerage companies have delivered large reductions in operating costs, they have delivered significant improvements in levels of service *at the same time*. I will not consider it acceptable to find that levels of customer service or environmental compliance slip. The efficiency targets are not - in any way - an excuse for a fall in standards.

Section 4: Chapter 19

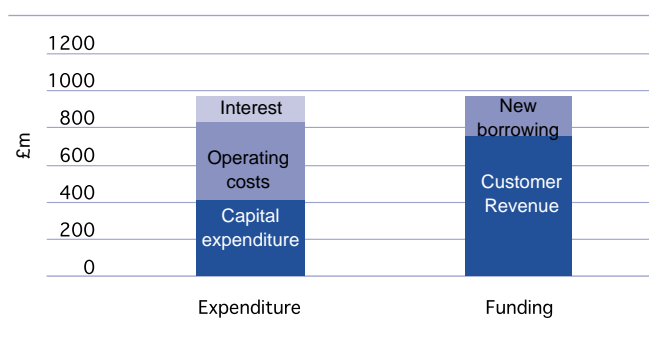
Costs: The Scope for Capital Efficiency

a) Importance of capital efficiency

Chapter 18 focussed on efficiency in operating expenditure. In this chapter I assess the potential for efficiency in capital investment. Efficiency is at least as important in capital investment as it is in operating expenditure. The amount of capital investment planned by the authorities is very considerable and would total £2.3 billion between 2002 and 2006, if there was no potential for efficiency. The reasons for such a large capital programme are outlined in Chapter 15.

The relative importance of this investment can be seen from Figure 19.1. It clearly shows where the water industry spends the revenues paid by customers. Capital investment accounts for over half of customer revenues¹.

Figure 19.1: Scottish water industry expenditure and funding 2000-01



The achievement of improved efficiency in the capital programme is necessary if the authorities are to deliver the outputs of the Quality and Standard programme and ensure that charges remain affordable for customers in Scotland. Every £10 million extra that is spent on capital will increase the average bill by £5 per year. Inefficient spending therefore results in higher customer bills. As a result, the customer interest is maximised when every pound that is spent by the authorities is spent as efficiently as possible and is targeted at ensuring a sustainable industry.

I have devoted extensive time and resources to the calculation of an appropriate efficiency target for capital expenditure, because this is the largest single element of water authority expenditure. This process has included rigorous information

collection from Scottish water authorities and thorough research into both the water industry in England and Wales and other utilities. The efficiency targets that I am recommending will, if they are achieved, generate savings of £0.6 billion between 2002 and 2006. As with operational expenditure efficiencies, these savings have to be achieved with no reduction in the level of outputs to customers - otherwise I will not consider the industry to have met its target. This target reduces the charges faced by the average household between 2002 and 2006 by about £120. The savings in 2005-06 alone will be almost £60.

b) Method used to assess targets for capital expenditure

I described the methodology which I used to calculate my capital efficiency targets in detail in Chapter 8. The starting point in assessing the scope for capital efficiency improvements was to study the asset lifecycle, then to build discrete efficiency blocks around this lifecycle, which I could analyse. This allowed me to identify potential areas where efficiencies may be achieved. The next step was to assess the sources of information and analytical tools that could inform my analysis.

Table 19.1: Areas for efficiency

Area identified for efficiency	Tools
Strategic Asset Management	Information Project; industry consultation; investment appraisal
Programme planning (appraisal)	
Procurement	Cost base analysis
Innovation	Babtie Group Report

The methodology combines both qualitative and rigorous quantitative analysis of the costs of capital projects. I have then made appropriate adjustments to allow these costs to be benchmarked against the costs faced by other water and sewerage companies in England and Wales. This is the Cost Base Analysis and it allows me to estimate the efficiency of the procurement function within the Scottish industry. I used this analysis alongside qualitative evidence from the Information Project, industry consultation and investment appraisal audits to provide a complete picture of the potential for efficiency.

The current level of efficiency in Scotland is compared with the level of capital efficiency that is assumed by Ofwat (and agreed

¹ Based on 2000-01 audited accounts for each authority.

with the privatised companies) in the capital spending budgets agreed for the current regulatory period in England. In order to ensure that the targets that I recommend are achievable, they are phased over the full Strategic Review period.

c) Application of the method: quantitative and qualitative

i) Information Project

The Information Project is discussed in detail in Chapter 3. It is worth reiterating here, however, that this initiative identified a number of areas, which are key to achieving capital efficiency, and which required urgent improvement. The results of this project provided a useful background to the study of the potential for efficiency and allowed me to understand the relative positions of Scotland and of England and Wales. The key areas for improvement identified by the joint teams were:

Strategic long term planning

One of the principal conclusions of the Information Project was that major changes in structure, methods and quality of resources were needed if the authorities were to prepare robust, long-term investment plans. The teams reported that the authorities typically planned over short horizons and mainly to achieve quality and environmental outputs. There appeared to be no strategic approach to developing a long-term asset management plan.

Strategic asset management plan

The authorities all seemed to be very operationally focussed. The authorities needed to develop a strategic asset management structure. This crucially requires a top-down approach, which defines the outputs required from the investment programmes in terms of the business strategy of the organisation.

Risk based approach to asset management

The teams found that the authorities needed to develop robust and more informed decision-making capabilities. There was a need to establish levels of acceptable risk and to measure

investment plans and their costs against this profile. This would enable the comparison of benefits between capital schemes on a like-for-like basis.

Project appraisal

The teams were also concerned about the level of scrutiny and challenge given by authorities to projects as they pass through the appraisal stage. They added that insufficient project appraisal was completed to derive optimum whole-life cost solutions.

These conclusions provide useful background information about the position of the authorities at the end of last year. The managements of the authorities have accepted these comments and have begun to try to address the gaps. All three authorities, for example, have restructured their asset management functions in the last year. There remains, however, much to be done.

ii) Industry consultation

As described in Chapter 8, my office spent a considerable amount of time meeting with stakeholders from other capital-intensive industries. These interviews were completed using a standard questionnaire in order to allow me to compare the results more easily. These industry interviews have broadly confirmed that the conclusions of the Information Project, which are summarised above, are in line with the experience of most utilities. There was a consistent common theme that efficient delivery of a capital programme required a step-function change in organisational culture. Table 19.2 provides a snapshot of some of the responses to my questionnaire.

iii) Industry benchmarking

My review of Ofwat's publications suggested that there has been significant progress by the privatised companies in delivering capital efficiency. Moreover, it is clear from the price limits that were agreed for the current regulatory period, that the companies recognise that there is considerable further scope for efficiency. It was therefore encouraging that the interviews with the privatised water companies confirmed their achievement of significant efficiencies and the potential for further improvement.

Table 19.2: Results of industry consultations

Changes in culture	Improved data	Better procurement
"Capital efficiencies have been achieved through improved visibility of the work programme (i.e. better planning) combined with cultural change and incentivisation." (ScottishPower)	"We have achieved many efficiencies through effective planning with robust information to support that planning." (Northumbrian Water)	"We take out RPI less 10% each year in procurement costs alone." (Yorkshire Electricity)
"Five year plans have improved project planning and encouraged the cultural change necessary for capital efficiencies." (Scottish and Southern)	"Effective planning has been dependent on good IT systems with 80% of planning efficiencies coming from investment modelling, forward planning, design and estimate." (Severn Trent Water)	"Recently partnerships have introduced procurement efficiencies of 10-30%." (Yorkshire Water)
"The need for a cultural step change and partnering in achieving our capital efficiencies." (Anglian Water)	"Standardisation of components, training and specifications can result in large project savings: specific cost can add 50% to base costs." (BAA)	"Value engineering, lesser frequency of tendering, meeting of contractors and end-users as early as possible and incentives all cut costs and therefore increase value." (Civil Engineers Contractors Association)

Table 19.3: Gap in procurement water authority 2000-1 versus Ofwat benchmarks 1998

	East	North	West
Water infrastructure	18.4%	23.3%	21.2%
Wastewater infrastructure	16.6%	13.8%	11.9%
Water non-infrastructure	0.2%	3.6%	10.7%
Wastewater non-infrastructure	19.4%	17.0%	15.7%
Overall %	13.4%	14.7%	14.1%

Between 1995 and 2000, the average saving in England and Wales was 13%. This is based on an average saving across the industry in capital maintenance of 11%² and in quality enhancement of 15%. The 15% capital efficiency is not published, however, and is my estimate. I believe this to be prudent because it is clear that capital efficiency in the quality programme by the privatised companies has been much higher than their achievements in capital maintenance³.

Between 2000 and 2005, the price limits assume that the likely cost of delivering quality enhancements will be on average 26% lower than those included by companies in their Business Plans

submitted to Ofwat. These business plans also contained an efficiency target for capital spending, but any agreed settlement was lower than anything contained in the company Business Plan⁴.

iv) Cost base analysis

Comparison against Ofwat benchmarks

Table 19.3 summarises the percentage gaps as at 2000-01 when the authorities' capital unit costs are compared with the Ofwat benchmarks.

² Ofwat Water and Sewerage service unit costs and relative efficiency 1999-2000 Report, Table 11.

³ Ofwat 1999 Periodic Review: Final Determinations, section 6.2.

⁴ Ofwat 1999 Periodic Review: Final Determinations, section 7.3.1, Table 21a and Table 21b: combined reductions in enhancement and maintenance of 25.8%.

Table 19.4: Gap in procurement versus Ofwat benchmarks as at 2000-01

	East	North	West
Water Infrastructure	23.5%	28.1%	26.2%
Wastewater Infrastructure	21.9%	19.4%	17.5%
Water Non-Infrastructure	6.5%	9.7%	16.3%
Wastewater Non-Infrastructure	24.5%	22.2%	21.0%
Overall %	18.9%	20.1%	19.5%

Table 19.5: Projected gap in procurement versus Ofwat benchmarks as at 2005-06

	East	North	West
Water infrastructure	32.6%	36.7%	35.0%
Waste water infrastructure	31.2%	29.0%	27.3%
Water non-infrastructure	17.6%	20.4%	26.3%
Waste water non-infrastructure	33.5%	31.5%	30.4%
Overall	28.5%	29.6%	29.1%

Table 19.6: Gap in procurement versus Ofwat lowest submission as at 2000-01

	East	North	West
Water infrastructure	31.0%	38.0%	34.8%
Waste water infrastructure	35.9%	35.2%	43.6%
Water non-infrastructure	13.5%	12.1%	27.6%
Waste water non-infrastructure	32.0%	36.9%	31.0%
Overall	28.2%	30.5%	32.9%

These gaps have to be adjusted for the time that passed between the submission of information by the companies in England and Wales and the time when the authorities provided their standard costs to me. As outlined in detail in Chapter 8, I have assumed that the rate of progress by the companies has been steady across all areas and that it is equal to a 4% real reduction per year (-2.5% in nominal terms)⁵.

The overall results for each authority are within 1.2% of one another, at around 20% behind the Ofwat benchmarks.

As I explained in Chapter 18, I have to look forward to ensure that Scottish customers are being asked to pay no more than is absolutely necessary. It is clear that the privatised companies are continuing to make progress in improving their procurement of the capital programme. The expected improvement in capital unit costs over this period is likely to amount to 12%. This reduction in capital unit costs for the privatised companies will cause the gap between Scotland and England and Wales to

widen to between 28.5% and 29.6% by 2005-06. This gap assumes that no progress is made by the authorities and that their procurement procedures cope with the complexities of a much larger and more varied investment programme. This is illustrated in Table 19.5.

Comparison against Ofwat lowest submission

As I explained in Chapter 8, the Ofwat benchmark is not based on the lowest price submitted and verified as a result of the Cost Base Submission process. It is based on Ofwat's assessment of the lowest realistic price obtainable as a result of the submissions. The benchmark cost can therefore be quite significantly higher than the lowest price submission. The Ofwat lowest submitted cost differs from the benchmark when the submission is from a company that does not meet set criteria to be representative of the industry. There is a marked increase in the efficiency gap in 2000-01 from 20% to around 30%, if the authorities' capital unit costs are compared to these

⁵ The COPI measure of inflation has been applied.

Table 19.7: Gap in procurement versus Ofwat lowest submission as at 2005-06

	East	North	West
Water infrastructure	39.2%	45.4%	42.5%
Waste water infrastructure	43.5%	42.9%	50.3%
Water non-infrastructure	23.8%	22.6%	36.2%
Waste water non-infrastructure	40.1%	44.4%	39.2%
Overall	36.8%	38.7%	40.9%

Ofwat lowest submissions, as opposed to the Ofwat benchmarks. Table 19.6 illustrates this point.

This gap would widen to around 40% if the privatised companies were to continue to perform as well as they have done previously in seeking out capital efficiency. Table 19.7 illustrates this point.

Overall cost base assessment

My analysis of the cost base information that was submitted to me by the water authorities demonstrates that there is very clear scope for improvement. It is vital to reiterate that these savings have to be achieved without sacrificing, in any way, the outputs to the customer or the level of environmental compliance. This analysis demonstrates that the gap in cost base or procurement efficiency ranges from at least 28.5% when compared with the Ofwat benchmarks, up to 40.9% when compared with the Ofwat lowest submissions.

I have used a number very much at the lower end of this range 29.5% when the results of the cost base analysis are combined with the other strands of analysis to establish a final capital efficiency target.

d) Recommendation

i) Combining results

I have considered the potential for efficiency across the whole asset life cycle. It was clear from the conclusions of the Information Project and from the industry interviews that significant progress was possible by introducing strategic asset management and by planning the capital programme better. As discussed in Chapter 8, however, it is not easy to quantify these potential savings. The most sensible way forward seemed to be to calculate the efficiency gap that will result from the achievement by the privatised companies of their targeted capital efficiency.

In order to calculate the asset management savings, I have reduced the overall target by the procurement efficiency gap (from the cost base analysis).

There would appear to be little doubt that the capital efficiency target agreed between the privatised companies and Ofwat will be achieved. Failure to achieve the capital (and indeed operating cost) efficiencies mean that the privatised company would earn a lower cost of capital than would otherwise have been available. This is not likely to impact positively on the market's perception of either the company or its management.

ii) Total assessed gap

Table 19.8 summarises the total assessed gap:

This total 41.9% capital efficiency achieved since privatisation can be divided into the four areas described in Chapter 8 as the building blocks of capital efficiency. This is shown in Table 19.9.

In Table 19.9, the procurement gap of 29.5% was established by the cost base analysis. It is assumed to have been achieved over the three regulatory periods: 11.9% in 1990-95, 9.2% in 1995-2000, and 11.9% in 2000-05. The estimate for the impact of new process and technologies innovation is taken from the Babbie Report, prepared for Ofwat. Since I have calculated a cumulative gap of 41.9%, the balance of 12.7% relates to strategic asset management and programme planning efficiency.

iii) 2005-06 Target

I have tried to establish a prudent approach to the setting of targets. I have, therefore, opted to set the capital efficiency target at 80% of the expected efficiency gap in 2005-06. This mirrors my approach to setting the target for operating costs in Chapter 18.

Table 19.8: Analysis of total assessed efficiency gap

Period	Saving
1990-95	11.9% ⁶
1995-2000	
Total achieved efficiency	13% ⁷
Procurement efficiency	9.2% ⁸
Asset management saving	4.2%
Delayed element of capital programme	2.1%
Planned spending not required	2.1%
Actual efficiency	11.1%
2000-05	
Total reductions agreed from Business Plans Estimates of which:	25.8% ⁹
Estimated procurement efficiency	11.9%
Asset management saving (including innovation) ¹⁰	15.8%
Total assessed efficiency gap	41.9% ¹¹
of which potential procurement saving	29.5%

I have, therefore, set the capital investment efficiency target at 34% for each authority. This target is phased, unlike in England and Wales, in order to take account of capital commitments already signed up to by the authorities and to allow the authorities to build up expertise in the areas highlighted by the Information Project as needing attention. There appears to be no material difference between the authorities, either as a result of my cost base analysis or from the conclusions of the Information Project. It would not therefore be appropriate to set any of the authorities a different target.

I have no doubt that Scottish Water would be capable of achieving my proposed targets, and that revenue caps should assume that they are achieved, if the merger proceeds. However, if the authorities retain their existing structure and

Table 19.9: Summary of total assessed efficiency gap by efficiency area

Area identified for efficiency	Comments	Efficiency gap (multiplicative)
Strategic asset management	No allowance for out-performance by plcs, or for efficiency gains after current Price Review, in 2005-06.	12.7%
Programme planning (appraisal)		
Procurement	Comparison against Ofwat benchmark, not lowest submission.	29.5%
Innovation	An estimate as some of the potential Innovation saving is reflected in the procurement saving.	5.5%

⁶ Assumes that the gap in cost base efficiency has built up since 1990, and the companies in England and Wales have improved at the rate of 2.5% nominal per annum.

⁷ Refer to Chapter 19, c, iii.

⁸ Assumes companies are 20% more efficient by 2000, consistent with a continued improvement of 2.5% per annum.

⁹ *Ofwat 1999 Periodic Review: Final Determinations*, section 7.3.1, Table 21a and Table 21b: combined reductions in enhancement and maintenance of 25.8%.

¹⁰ Asset management saving = Total saving – Estimated Procurement Efficiency

$(1-25.8\%) = (1-Y\%) \times (1-11.9\%) = (1-Y\%) \times 88.1\%$ $1-Y\% = 74.2\% \div 88.1\%$

$Y\% = 1 - (74.2\% \div 88.1\%) = 15.8\%$

¹¹ Cumulative gap is calculated by a multiplicative calculation of the actual efficiency attainments between 1990-95, 1995-2000 and 2000-05 i.e. $[1-(1-11.9\%)(1-11.1\%)(1-25.8\%)]$

Table 19.10: 2005/06 Capital efficiency target

Cumulative Gap	42%
Actual Target (80% of Gap)	34%

Table 19.11: Capital expenditure element (92% of Quality and Standards Programme¹²)

	2002-03	2003-04	2004-05	2005-06
East	0%	7%	14%	20%
North	18%	24%	28%	34%
West	18%	24%	28%	34%

there is no merger, then I would wish to be more prudent in my assumptions. My calculations of the revenue caps under the existing structure therefore assume that my targets are not fully achieved, and that closure of the efficiency gap would only reach 50%, instead of the target 80%.

The phasing of my target is set out in Table 19.11.

These targets are then applied to the profile of capital spending required in each year. I have slightly modified these profiles (in consultation with the authorities) in order to phase increases in charges for customers.

The overall saving in the North area is slightly less than in the West area. This reflects the greater number of water quality undertakings that have to be completed by the North of Scotland Water Authority early in the regulatory period (see Chapter 15).

The actual bottom line cash available for the East of Scotland Water Authority does reflect the same efficiency targets as for the other two authorities. The actual percentage targets are, however, different and this reflects the fact that during the Quality and Standards process, the East of Scotland Water Authority requirement for capital investment was reduced significantly. Figures 19.2 to 19.4 illustrate this.

Table 19.12: Overall Quality and Standards Programme capital expenditure efficiency

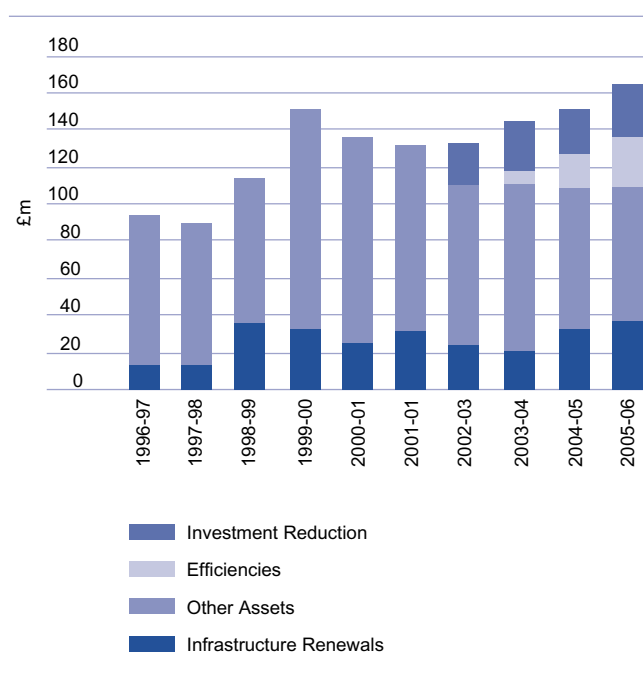
	Overall efficiency
East	11%
North	26%
West	27%
Total	23%

iv) Impact on capital investment spending

The total spending on capital investment by the Scottish water industry will be reduced from the £2.3 billion over four years as originally costed by the water authorities to £1.7 billion. This total investment spending excludes any potential capital element of the Spend to Save allowance. This represents a total efficiency of £0.6 billion, or a reduction of nearly £280 in the total amount paid by the average domestic customer over the regulatory period.

The phasing of the total capital programme for each authority is shown in Figures 19.2 – 19.4.

Figure 19.2: East of Scotland Water Authority post-efficiency investment profile



¹² The capital efficiency targets are applied to 92% of the Quality and Standards investment programme. The other 8% represents capitalised labour, which is subject to the average operating cost efficiencies across Scotland.

Figure 19.3: North of Scotland Water Authority post-efficiency investment profile

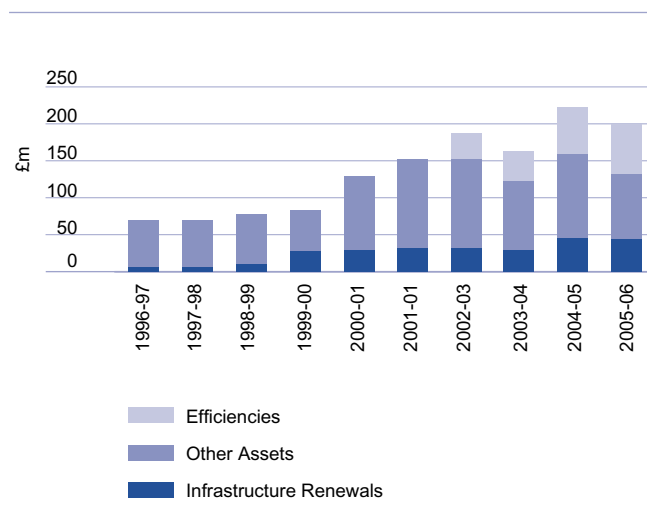


Figure 19.4: West of Scotland Water Authority post-efficiency investment profile



In Figure 19.2 for East of Scotland Water Authority, the investment reduction elements illustrate that the bottom line cash available to East of Scotland Water Authority is the same irrespective of whether it is calculated on the basis of the 18%/24%/28%/34% phasing applied to the original investment estimated, or on the basis of 0%/7%/14%/20%, which I have applied to the revised capital budget estimates by the authority.

Across Scotland, the capital maintenance component is fairly level in the first two years in actual cash terms before accelerating in the latter two years. In terms of outputs, however, the phased efficiency targets would imply that the capital maintenance component grows consistently over the regulatory period as Table 19.13 shows.

The total expenditure on investment is some 50% of the revenue paid by water customers (approximately £750 per household in Scotland) over the 2002-06 period. The investment in 2005-06

Figure 19.5: Scotland post-efficiency investment profile

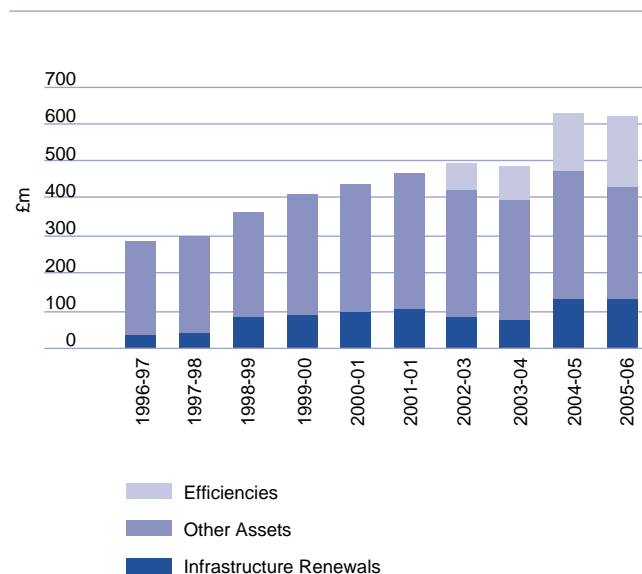


Table 19.13: Investment profile across Scotland

	2002/03	2003/04	2004/05	2005/06	TOTAL
New/other assets	£341m	£317m	£339m	£292m	£1,289m
Infra- structure renewals	£82m	£76m	£133m	£138m	£429m
Total	£423m	£393m	£472m	£430m	£1,718m
Target efficiencies	£69m	£98m	£159m	£192m	£518m
Pre efficiency total	£492m	£491m	£631m	£622m	£2,236m
Infra structure restated - for inefficiency	£99m	£100m	£195m	£228m	£622m

represents an increase of 54% on the amount spent in Scotland in 1996-7 in cash terms and an increase of approximately 120% in terms of level of service impact.

f) Implementability

i) Reducing the efficiency gap

I have adopted estimates consistently at the low end of the possible outcomes. I can, therefore, see no reason why the authorities should not be able to achieve the target. Indeed, achieving the 80% target will still leave the authorities or the proposed Scottish Water some 8% short of the average level of capital efficiency which the companies in England and Wales had achieved by 2000-2001. If the leading companies continue to outperform the target (as history suggests they will) the gap could be even larger by 2005-06.

ii) Industry consultation

As I have phased the introduction of my target the industry is being required to save 23% of the total capital budget during this regulatory period. This is less than the 26% saving from the companies' business plans that was assumed by Ofwat.

Moreover, the results of the industry consultation process suggest that companies in the private sector have achieved capital efficiencies of this scale in the past. These consultations also confirmed that better procurement should account for a large proportion of the initial savings. There are many examples, both in the utilities industry and in other asset intensive industries, which would suggest that my target is definitely achievable.

- Yorkshire Water and Northumbrian Water claimed that savings of at least 20% were made in the 1994-99 period. Severn Trent claimed that savings of just under 15% over the same period. South West Water has achieved an 18% saving in its partnering agreement with Babtys to build a sewage treatment scheme. It should be emphasised that the companies achieved these savings from a much more efficient level than that of the authorities today. This would imply that the scope for efficiency in Scotland is much higher than these figures would suggest. Meanwhile, AWG (formerly Anglian Water) has estimated that capital

efficiencies in the 2000-05 period will exceed 25%. The majority of these savings are expected to be in planning and procurement.

- Scottish and Southern plc claim that improved and common specifications have resulted in capital savings of up to 30%. This indicates the level of savings that might be available if a more strategic approach to asset management planning is introduced.
- Yorkshire Electricity sets targets of RPI – 10% in capital procurement costs alone. Similarly, Scottish Power claim improvements in procurement savings of 7-10% each year. These achievements are all the more impressive because they are achieved from a more efficient baseline than the authorities.
- BAA plc's five year pavement partnership with AMEC has achieved efficiencies of 30%. The targeted savings on the original planned expenditure on Terminal 5 at Heathrow already exceed 20%.
- EXXON expects to continue to make savings of 4% per annum in nominal terms over the next ten years. This is in a mature industry (and one of the first to introduce risk-based strategic asset management), where many of the efficiencies will already have been achieved.

iii) Public Private Partnerships

Significant efficiencies have already been achieved in the Scottish water industry. The PPP discussed in Chapter 17 delivered savings over conventional procurement as follows¹³:

- East of Scotland Water Authority - 42% efficiency in the Almond Valley, Seafield and Esk Valley PPP scheme
- North of Scotland Water Authority - 19% efficiency in the Aberdeen PPP scheme
- West of Scotland Water Authority - 29% efficiency in the Meadowhead, Stevenston and Inverclyde PPP scheme

In particular, the East of Scotland Water Authority savings give assurance that sound management can drive the authorities to achieve my efficiency target.

¹³ Water authorities' evidence to the Transport and Environment Committee.

g) Risk analysis and sensitivities

i) Risk

The capital programme accounts for approximately half of a customer’s bill. I therefore need to understand how the risks and opportunities discussed could affect the level of customers’ bills, the level of borrowing and the availability of funds to deliver, in timely fashion, the outputs of the agreed environmental programme and service improvements.

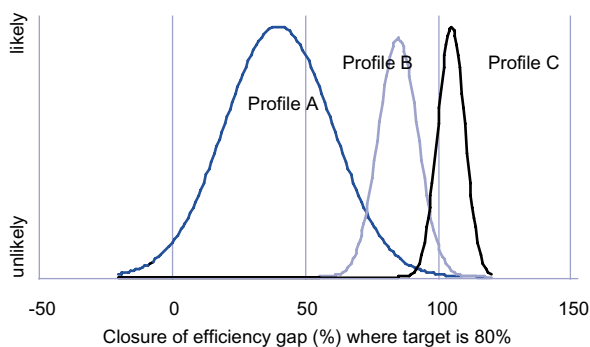
In response to the Minister’s request for a formal risk analysis, I have developed three risk profiles for capital expenditure. These profiles have been developed in response to the potential scenarios outlined in Chapter 18.

Each of these profiles depicts my assessed relative probability of achieving a particular degree of closure of the efficiency gap. The proposed target closure in each case is 80%.

Profile A – Scottish Water

In this scenario, I have assumed that the degree of efficiency achieved is unpredictable, and that a wide range of outcomes could occur. This happens because the key success factors noted above are not fully addressed. I believe that it is unlikely under this scenario that the proposed targets would be approached, and there is a slight possibility that the recent decline in performance could continue. Broadly, I would expect the authority to make more progress against the capital efficiency target than the operating efficiency target (see Chapter 18). I believe that the target for capital cost is less dependent on the successful transformation of the organisation.

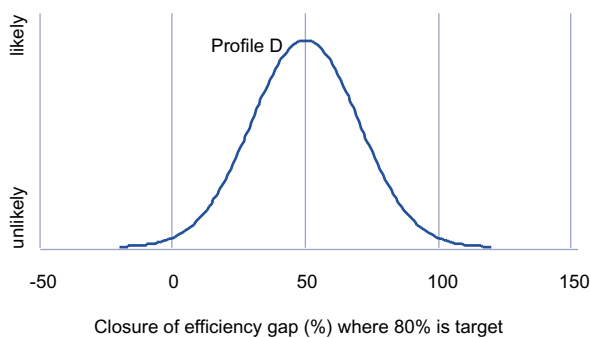
Figure 19.6: Risk profiles for capital expenditure – Scottish Water



Profile B – Scottish Water

I have assumed in this scenario that the proposed Scottish Water has addressed the key management issues outlined above. I have also assumed that this is done quickly and is a direct result of the creation of Scottish Water from the three existing authorities.

Figure 19.7: Risk profiles for capital expenditure – three authorities



Under this scenario, the likely closure of the efficiency gap is much more predictable. I believe that given the conservative assessment of the targets, the management should be able to achieve the targets with a margin to spare and that significant under- or out-performance of the targets is unlikely. My analysis has shown that the water and sewerage companies in England and Wales have a very consistent record of performance. I cannot see any reason why this should not be repeated in Scotland.

The management of Scottish Water has a significant advantage in that it can learn from the experience of the privatised companies.

Profile C – Scottish Water

The critical issues are addressed. Scottish Water adopts capital procurement and strategic asset management best

practice. This would involve risk/benefit sharing in procurement and potentially the use of short term BOOT (Build Own Operate Transfer) or BDOT (Build Design Operate Transfer) agreements in order to minimise unit costs. In my view, this scenario could, at one extreme, produce efficiencies at the leading edge for the UK. This scenario would be very unlikely to fail to deliver the proposed efficiency target, because this would imply contract prices well above the norm in England and Wales.

Profile D – three authorities

This covers a wide range of outcomes, driven mainly by the degree of commitment within the authorities to achieving efficiencies. Unlike Scottish Water, where there are three distinct scenarios, I consider that in the three authority model, the degree of commitment can best be represented by a smooth spectrum of risk.

I find no compelling reason to suppose that the risk profiles A to D should be skewed in any way. I believe, therefore, that a Normal distribution seems most appropriate.

I have adopted these assumed profiles in my financial risk analysis. This uses a standard risk analysis software linked to the simple financial model described in Chapter 10. The results of this analysis are set out in Chapters 33 and 37.

ii) Sensitivity

I have again completed a sensitivity analysis for capital expenditure. This is in addition to (and separate from) the risk analysis. This sensitivity analysis covers the impact in terms of:

- impact on public expenditure,
- household bills and;
- months of delay in receiving the outputs of the planned investment if my targets are to be achieved.

Table 19.14 demonstrates the importance of the efficiency targets to the affordability of the capital investment programme. A shortfall in performance of just 20% of the identified efficiency gap would mean either: that customers pay £44 more in bills over the four years of the Review period; or that an additional £124 million has to come from public expenditure over the same period, or that there is 3 months delay in the outputs of the investment. Out-performance of my targets could potentially have a positive impact on the future bills of customers.

h) Monitoring delivery

i) Role of the Regulator

It is my duty to promote the interests of customers, and I do not intend that customers should pay more because there is an unidentified scope for efficiency within the Scottish water industry.

Table 19.14: Impact in £m of level of achievement, relative to proposed capital investment expenditure efficiency target:

	Degree of closure of efficiency gap by 2005-06 (%)							
	30%	40%	50%	60%	70%	80%	90%	100%
Total cost in 4 years to 2005-06	£310m	£248m	£186m	£124m	£62m	0	-£62m	-£124m
Impact on bills in 4 years to 2005-06	£110	£88	£66	£44	£22	0	-£22	-£44
Months delay in outputs	7.5	6	4.5	3	1.5	0	-1.5	-3

I do not, however, have any role in deciding how the efficiencies should be achieved. This would cross the important line between management and regulation. It is entirely a matter for management to decide how to allocate the resources that are available to them.

The authorities do have to manage risk appropriately, but the performance criteria are quite well defined in the Quality and Standards process. There are, of course, choices for the authorities on the precise allocation of the resources available to meet the outputs required.

ii) Monitoring outputs

It is an important part of my role to ensure that the outputs delivered by the industry are the same or greater than has been agreed during the Quality and Standards process. It is vital to confirm that customers receive the levels of service for which they are being asked to pay.

I am developing a process in collaboration with the quality regulators to monitor the delivery of outputs. There are already two monitoring tools for the capital investment programme of the water authorities in my office.

- Annual Return Tables¹⁴ - Table K is the Investment plan and Table G the Investment Plan (forecasts and actual outturn), and Table H contains current and future asset information. If I compare the movements in Table G with Table K (which has been fixed in time) I am able to scrutinise investment expenditure by timing and amount. Any significant changes are immediately obvious and will be queried with the authority. This should ensure timely delivery of projects for customers and that legislative deadlines are met. Reductions in expenditure and maintenance of the same outputs in the asset Table H also provides evidence of efficiencies.
- Quarterly monitoring – This monitoring focuses on the investment within the particular financial year. It is also reconciled to the tables returned annually (Table G). This quarterly monitoring gives my office a report on the actual

compared to planned expenditure on each individual scheme. This format also allows me to receive a summary of spending within the year by investment purpose and by project status every three months. I am, therefore, able to query quickly any changes in project status or spend within a financial year. This should provide me with an early warning of a delay in project implementation or of a large unplanned overspend.

When I monitor environmental or water quality improvements delivered by the investment programme, collaboration with SEPA and the Drinking Water Quality Regulator is a critical part of the process. This process has been on an ad-hoc basis, but is now going to be on a more formal basis. I am currently working with SEPA and the Drinking Water Regulator to scope out the terms of reference for a project to review the definition of levels of service outputs. The aim of this project will be to improve the current output measures and to ensure consistency of interpretation Scotland-wide. This is an important initiative which I recommend the Minister endorse.

i) Conclusion

I have set my capital efficiency target at 34% annually by 2005-06. This is 80% of the assessed gap of approximately 42% between the Scottish and the water industry in England and Wales. This target is phased in over the period 2002-2006.

The authorities can achieve the target by becoming more efficient in any of the areas in the asset lifecycle: strategic asset management, programme planning (appraisal), procurement and innovation. However the majority of the target is likely to be accounted for by procurement. This means that objective measurement of the delivery of the targets is possible. It also means that some of the more difficult to achieve culture changes, while no less vital in the medium term, are not a prerequisite of achieving the target.

The target is not easy, but it is possible - (the privatised companies are already doing better than the targets, and in most cases achieved this over a shorter period).

¹⁴ See Chapter 3

Section 4: Chapter 20

Costs: Merger Savings

a) Introduction

Chapters 18 and 19 discussed the efficiencies in operating and capital expenditure that should be achievable by the authorities as individual entities. It is the aim of this chapter to examine the potential for savings resulting from the proposed merger of the three existing water authorities. The Scottish Executive stated in its Water Services Bill Consultation Paper that one of the primary attractions of the proposed merger was to improve the authorities' ability to become more efficient. There are certainly clear synergies in dealing with the multi-site non-domestic customers and the merger would also provide an opportunity to create a stronger, more focussed, management team.

The current three Scottish authorities are relatively small in a UK context. Table 20.1 shows the number of customers of each of the current water and sewerage undertakers in the UK.¹

If Scottish Water is approved by Parliament, it will become the fourth biggest in the UK. This will undoubtedly bring benefits to the merged authority. There will be increased buying power for vital inputs (e.g. chemicals and electricity) and a stronger negotiating position with capital investment contractors. It is

also likely that the proposed Scottish Water would find it easier to attract, retain and reward the highest quality staff. It is to be hoped that this merged organisation will attract a board of the highest calibre.

This chapter reviews the potential for merger efficiencies and sets an efficiency target for the proposed Scottish Water. This efficiency target would only apply if Scottish Water comes into being. Merger efficiencies might result from the integration of head offices and support services, from economies of scale and from disposals of assets no longer required by Scottish Water.

The merger efficiency target comprises two elements. The first is the actual sustainable efficiency that results from the creation of Scottish Water. The second is the benefit received from property disposals. The scope for disposing of assets will inevitably fall over time, although it is interesting to note that, more than ten years since privatisation, property disposal is still a significant revenue stream for the privatised companies.

I have devoted considerable resources to the calculation of an appropriate efficiency target. I have collected Scottish water industry information and researched the experience of other utilities that have merged. I have set a target of £39 million of

Table 20.1: Relative sizes of the water authorities and companies

Company/Authority	Total number of customers (domestic and non-domestic) (1999–2000)
Thames	5,018,000
Severn Trent	3,468,000
North West	2,937,000
Proposed Scottish Water	2,385,000
Anglian	2,245,000
Yorkshire	1,968,000
Southern	1,687,000
Welsh	1,237,000
West of Scotland Water Authority	1,110,000
Northumbrian	1,100,000
Wessex	1,009,000
East of Scotland Water Authority	715,000
South West	685,000
North of Scotland Water Authority	560,000

¹ Due to discrepancies caused by customers having separate provision of water services/septic tanks, the figure given for each company is the greater of the two values of the number of billed properties for water or for sewerage.

savings. This saving reduces the required increase in household bills by almost £20 in 2005-06.

It is again important to stress, as I have in previous chapters, that these savings have to be achieved with no reduction in the level of outputs to customers. Mergers should not adversely impact on service to customers. In a number of other mergers and takeovers, customers have benefited from an improved level of service. For example, Southern Water received top placing for customer service the year after being taken over by Scottish Power, when it centralised its call and control centres. This improvement in customer service occurred while costs were reduced by some 15%.

b) Methods used to assess the scope for merger efficiency

I described the methodology used to assess the scope for merger efficiency in Chapter 9. I looked at the potential for sustainable merger efficiencies in five ways:

- application of an Ofwat econometric model to Scottish Water;
- assessment of head office and support service savings based on information provided by the authorities about indirect costs;
- assessment of head office and support service savings as above, applying an estimate of actual salaries in head office functions;
- review of efficiencies achieved in water sector mergers;
- review of efficiencies achieved in other utility, public and private sector mergers .

As has been my practice in operating and capital cost efficiency, my final target will take 80% of the assessed potential. I then add potential disposal proceeds in full from the sale of assets to each of these methods. It is appropriate to add 100% of disposal proceeds as experience from England and Wales shows that any early assessment of potential will be significantly lower than the level of proceeds achievable.

I have, of course, concentrated on savings that could only be achieved if the authorities were to merge. I have assumed that costs are reduced by 35%, in line with the individual authority targets for operating and capital expenditure. I then calculated

the scope for the merger savings from this more efficient starting point. I am therefore confident that I have avoided double counting any potential for efficiency already included in my operating cost and capital efficiency targets.

Despite the additional investment savings that should be possible from better procurement, I have opted not to include these savings as it is difficult to make a robust estimate. The merger savings therefore result only from additional operating cost efficiencies. My prudent starting point and my inclusion only of operating cost potential should ensure that the merger savings target should be comfortably achievable.

c) Application of the method

i) Ofwat model

The Ofwat model approach provides a useful benchmark. It should provide a relatively prudent answer, because Ofwat is always keen to provide an incentive to the privatised companies to achieve greater savings than those implied by any target. The model was established to estimate economies of scale on operating expenditure for water supply. It is described in Chapter 7. Unfortunately no similar model exists for sewerage, although I can see no reason why economies of scale should be fundamentally different for sewerage. The economies of scale estimated by the model are based on the relationship between operating costs and the total number of properties billed. The model predicts that a merged single authority would cost 11% less to operate than the three authorities.

As explained above, I have assumed a 35% reduction in the reported costs for 2000-01. I have done this to avoid double counting the operating cost and capital efficiency targets. This calculation is shown in Table 20.2:

Expressed in 2005-06 prices, the merger savings estimated by the Ofwat model amount to £36.6 million. This potential saving therefore reflects the economies of scale that would result from combining the three authorities, but excludes the savings resulting from my other efficiency targets.

ii) Head office function savings

Inevitably, efficiencies are equated with job losses. The experience of the privatised companies has, however, been very varied. Wessex Water has reduced employment by 15%

Table 20.2: Calculation of potential merger savings – Ofwat model

	Water service operating expenditure	Sewerage service operating expenditure	Own work capitalised	Total
Reported costs 2000–01	£227.2m	£195.7m	£28.9m	£451.8m
Costs after 35% efficiencies	£147.7m	£127.2m	£18.8m	£293.7m
Merger savings (11% of efficient cost)	£16.2m	£14.0m	£2.1m	£32.3m
Costs after all savings	£131.5m	£113.2m	£16.7m	£261.4m

and is the most efficient company. Welsh Water (Dŵr Cymru), in contrast, reduced employment by 54% and was in 1998-99 the least efficient company.

In the analysis that follows I talk about headcount reductions. This should not be taken to mean that I advocate job losses or a particular method of achieving a target. This is properly an issue for management, workers and unions.

Head office costs, however, do tend to be a function of the cost of employees, in terms of both salary and overheads. I now set out my calculations of the potential efficiency in the following four areas:

- savings in general and support labour and overheads,
- scientific services labour and overheads,
- customer services procurement,
- other scale procurement.

I have set out both versions of my bottom-up analysis of potential merger savings together. The only difference is in the average salary used. I have assumed that the new single head office would be approximately half the size of the three existing head offices (post efficiency). I reviewed the sensitivity of this assumption and the results are presented below.

General and support labour

Labour cost savings are the largest part of the potential efficiencies. Table 20.3 summarises current labour costs per head, after my 35% efficiency target adjustment. I have tried to calculate more accurately the average salary in head office functions and the available information would suggest that it is about 15% higher than the indirect salary cost average. In my second version, I have added this 15% to the standard labour cost per head.

This analysis gives average costs per head of £33,000 (version 1), or £38,000 (version 2). I have applied these averages to the revised head office size. The resulting savings were then inflated to 2005-06 prices. The results are shown in Table 20.4.

Likely savings as a result of the merger would be in the range of £21 to £24 million.

Table 20.3: Calculation of general and support labour costs

	East	North	West	Scotland
General and support employees	493	382	344	1,219
General and support employees costs	£18,300,000	£6,900,000	£14,600,000	£39,800,000
Capitalised employment costs	£137,000	£168,000	£209,000	£514,000
Standard labour costs per head	£37,500	£18,600	£43,000	£33,000
Added head office percentage (15%)	£5,600	£2,800	£6,500	£5,000
Head office labour costs per head	£43,100	£21,400	£49,500	£38,000

Table 20.4: Potential range of general and support labour merger savings

Reduction in head office staff	2005–06 labour savings: version one	2005–06 labour savings: version two
40%	£16.8m	£19.3m
45%	£18.9m	£21.7m
50%	£21.0m	£24.1m
55%	£23.1m	£26.5m
60%	£25.1m	£28.9m

General and support overheads

There is a close link between any reduction in the number of staff and reductions in overheads. Staff reductions will lead to fewer or smaller premises, and the need for lighting, heating and other expenditures is obviously reduced.

The overheads after my efficiency targets adjustment were as shown in Table 20.5.

This produced average figures of £24,300 or £27,900. I then applied these results to the revised head office size. I have inflated the current value of the saving to 2005-06 prices. The results are shown in Table 20.6.

Likely savings as a result of the merger would be between £15 million and £18 million in 2005-06 prices.

Scientific services savings

Scientific services are separate from general and support services. There is significant evidence from England and Wales

Table 20.6: Potential range of general and support overhead merger savings

Reduction in head office staff	2005–06 Overhead savings: version one	2005–06 Overhead savings: version two
40%	£12.3m	£14.2m
45%	£13.9m	£15.9m
50%	£15.4m	£17.7m
55%	£16.9m	£19.5m
60%	£18.5m	£21.2m

that efficiencies can be achieved in this area. I have, however, taken a prudent approach and assumed that two laboratories will be required by the proposed Scottish Water. This does reduce the potential for savings, but the merger will still bring benefits.

Total annual laboratory costs in Scotland are £11.8 million. Applying my 35% efficiency would leave £7.6 million as the pre-merger cost base.

Table 20.7: Potential range of scientific services merger savings

Scientific services reduction	Savings	2005–06 Savings
10%	£0.8m	£0.9m
15%	£1.1m	£1.3m
20%	£1.5m	£1.7m
25%	£1.9m	£2.2m
30%	£2.3m	£2.6m

Likely savings as a result of the merger would seem to be around £1.7 million in 2005-06 prices.

Table 20.5: Calculation of general and support overhead costs

	East	North	West	Scotland
General and support employees	493	382	344	1219
General and support other costs	£3,100,000	£11,100,000	£12,500,000	£26,700,000
Capitalised overhead costs	£248,000	£69,000	£109,000	£426,000
Standard overhead costs per head	£6,800	£29,300	£36,700	£24,300
Added head office percentage (15%)	£1,000	£4,400	£5,500	£3,600
Premium overhead costs per head	£7,800	£33,700	£42,200	£27,900

Table 20.8: Assumptions on customer services merger savings

Item	Treatment
Labour costs	50% saving to account for head count reductions
IT related expenditure	50% saving to account for head count reductions, and then 6% saving to account for procurement scale saving
Indirect support costs	50% saving to account for head count reductions, and then 6% saving to account for procurement scale saving

Customer services and related procurement

The proposed merger should allow centralisation of customer service and should provide substantial focus for economies of scale in procurement. For example, one call centre could be established to cover all customer enquiries; this would not require the same staffing levels as three separate call centres.

For consistency, efficiency savings of 35% prior to the merger are assumed. I have also assumed procurement savings of 6%.

I have used the information provided to me by the authorities in response to my WIC 21 letter. I have treated labour costs, IT expenditure and indirect support costs as outlined in Table 20.8.

Table 20.9: Potential range of customer services merger savings

Staff reduction level	Customer services savings	2005–06 savings
40%	£3.4m	£3.9m
45%	£3.8m	£4.3m
50%	£4.2m	£4.8m
55%	£4.6m	£5.2m
60%	£5.0m	£5.7m

Table 20.9 shows the efficiencies that may be available in the customer services and procurement areas.

Likely savings as a result of the merger would seem to be around £4.8 million.

Procurement

As I explained above, one of the principal obvious benefits of the creation of Scottish Water is that the organisation will have credible scale. This should allow significant procurement savings. A single authority should be able to realise savings in areas such as power, materials and consumables, and hired and contracted services. Table 20.10 presents current spending on these categories. I also make my standard 35% adjustment to ensure no double counting.

I have assumed that 6% savings could be achieved. This is just over half of the projected efficiency from the Ofwat model and is therefore prudent. The results are shown in Table 20.11:

Likely savings as a result of the merger in 2005-06 would seem to be around £2.9 million.

Table 20.10: Calculation of potential merger savings on procurement

	East of Scotland Water Authority	North of Scotland Water Authority	West of Scotland Water Authority	Total
Power	£6.2m	£4.8m	£7.5m	£18.5m
Hired and contracted services	£4.2m	£6.2m	£5.1m	£15.5m
Materials and consumables	£6.0m	£4.9m	£19.8m	£30.7m
Total	£16.4m	£15.9m	£32.3m	£64.6m
Pre-merger efficiencies (35%)	£5.7m	£5.6m	£11.3m	£22.6m
Revised total	£10.6m	£10.3m	£21.0m	£42.0m

Table 20.11: Comparison of estimated merger savings

Procurement scale savings	Savings	2005–06 Savings
5%	£2.1m	£2.4m
6%	£2.5m	£2.9m
7%	£2.9m	£3.3m
8%	£3.4m	£3.8m

Summary

My approach clearly demonstrates that significant savings can result from the creation of Scottish Water. My analysis of the 'bottom up' potential suggests greater savings than the Ofwat model. The results of my analysis from each of the three methods is summarised in Table 20.12:

Table 20.12: Summary of merger savings

	Ofwat model approach	'Bottom-up' version one	'Bottom-up' version two
Labour cost savings		£21.0m	£24.1m
Overheads savings		£15.4m	£17.7m
Customer services savings		£4.8m	£4.8m
Scientific services savings		£1.7m	£1.7m
Procurement scale savings		£2.9m	£2.9m
Total	£36.6m	£45.7m	£51.2m

iii) Empirical observations of merger savings

I sought to confirm my quantitative analysis by comparing the results with mergers that have taken place in the water sector, in other utilities and in the wider public and private sectors.

It is always difficult to compare savings achieved by mergers. I have opted to compare the savings from my review of other mergers on a percentage of operating costs or of revenue. For reference, my assessment of potential for efficiency in merging the three authorities is between 3.5% and 5% of revenue.

My assessment of this potential would seem to be broadly shared by City analysts. Credit Suisse First Boston has estimated that savings, ranging from £30 million to £90 million, have been made through the recent large mergers and acquisitions involving utilities. In addition, Deutsche Bank has estimated that the merging of two medium-sized utilities, each

of around 1.5 million customers, would allow for cost synergies of between £28 million and £42 million to be made².

Utility mergers

The following three examples of utility mergers provide an indication of the potential for merger savings.

- The merger of North East Water and Northumbrian Water
The Competition Commission judged that further efficiency savings were not possible unless the merger took place. The estimated annual merger savings ranged from £3 million to £11 million. This was between 1% and 4% of annual turnover. Northumbrian Water has confirmed to us that this range was a significant underestimate.

Indeed, the companies accepted a 15% price reduction over six years imposed by Ofwat, as a condition of the merger (water only).

- Creation of Three Valleys Water plc
It was reported that the 1990 merger of three small water companies to form Three Valleys Water was expected to achieve savings of £6 million per annum. These savings represented around 6% of turnover. As above, the company accepted a 10% price reduction over six years as a condition of the merger.

- Scottish & Southern and Swalec
The recent acquisition of Swalec led the new owners to identify £20 million of potential savings solely through streamlining billing and customer service systems. The creation of Scottish and Southern itself has created £53 million of savings per annum, constituting 1.7% of group turnover. Total savings are expected to reach £120 million, which would represent 3% to 4% of turnover.

Other mergers

A further indication of the scale of savings can be gained by looking at merger cases outside the utilities industry, both in the public and private sectors.

- Public Sector
There are numerous examples where government initiatives achieved or are seeking to achieve merger benefits:

² *Moneybags 2*, report on UK utilities, 23 July 2001

- The aim of proposals to reduce the number of health trusts in Scotland is to save £18 million per annum. This equates to 6% of total expenditure on management and administration.
- The probation services are aiming to save 9% of operating costs by merging 54 services into 42.
- The creation of the Welsh Development Agency, through the merger of the Development Board for Rural Wales and the Land Authority for Wales, led to savings of £2.25 million. This is equivalent to 9% of pre-merger running costs.

- Private Sector

Merger activity in the private sector is more commonplace and the benefits claimed are often large. The following examples illustrate:

- Marley merged its operations to save £30 million per annum. This amounts to 5% of turnover.
- The creation of Reckitt and Benckiser aimed to save £160 million per year by 2001. This amounts to 5% of net revenues.
- Nycomed Amersham announced that following the completion of their merger, savings of £70 million per annum, or 5% of their turnover would be made.
- Astra Zeneca aims to achieve merger savings equivalent to 9.5% of its turnover.

While the above examples are purely illustrative they do indicate that merger savings of about 5% of revenue are common. I am therefore encouraged that my detailed analysis is in line with industry experience. I would also note that a merger of three organisations with common boundaries should be expected to generate greater savings than those of organisations distant from each other.

iv) Asset disposals

As explained above, I have added my estimate of the potential for property disposals to each of the estimates of merger savings.

Many disposals will be possible as a result of the operating cost efficiency targets. However, the merger will undoubtedly free up more properties for disposal.

Potential for disposals

The most obvious asset disposals as a result of a merger would be two of the three head offices. It could be argued that it may be possible to sell all three since the new headquarters may actually be smaller than any of the existing offices. I have been informed by the authorities that the three owned head office properties have a market value in excess of £15 million. The receipt from two sales could therefore be prudently estimated at £8 million.

Table 20.13: Comparison of number of depots

	East	West	North	North West	North West Proposals
Number of depots	11	42	47	10	5
Population per depot	143,000	57,000	23,000	686,000	1,370,000
Area per depot (km ²)	1,000	500	1,000	1,400	3,000

Table 20.14: Comparison of number of offices

	East	West	North	South West	Southern	North West	Wessex
Number of offices	10	21	10	4	8	12	5
Population per office	158,000	114,000	110,000	381,000	278,000	571,000	236,000
Area per office (km ²)	1,100	1,000	4,600	2,700	1,300	1,200	2,000

My analysis shows that Scotland has a relatively high number of offices and depots. I believe therefore that there is likely to be significant scope for proceeds from premises disposals. To try to understand the scope for disposals, I compared the situation in Scotland with comparator water companies in England and Wales. The results are shown in Table 20.13 and Table 20.14^{3,4,5}.

It is instructive to note that North West Water is proposing to have one depot per 3,000km². In contrast, West of Scotland Water Authority has six depots covering the same area, and North of Scotland Water Authority and East of Scotland Water Authority each has three. The number of offices in Scotland would also appear to be high, with each authority having at least one third more offices per head of the population than any of the comparator companies.

In order to quantify the scope for asset disposals, I have assessed the potential in terms of real estate value per employee. The responses to my WIC 20 letter by the authorities allowed me to calculate a real estate value per head. I have assumed a headcount reduction of 35% to reflect pre-merger efficiencies, and a 50% reduction of the remaining head office employees to reflect merger efficiencies.

The resulting savings, totalling £38.9 million in 2005-06 prices⁶, are set out in Table 20.15.

These savings, if achieved over four years, correspond to an annual rate of £9.7 million in 2005-06.

d) Recommendation

My assessment of the potential scope for savings in 2005-06, derived by different methods, is as set out in Table 20.16.

The figures above show a range from a minimum of over £36 million to £52 million, without the inclusion of asset disposals. This increases to between £45 million and £60 million when asset sales are included.

I believe that my 'bottom-up' quantitative estimates are robust. They are based on detailed information submitted to me by the authorities. However, I am seeking to set a target that balances the need to keep customer charges down with the need to ensure that the target is achievable. I have therefore chosen to use the lowest estimate of potential efficiency. This is £36.6 million and is the result of my application of Ofwat's model for scale efficiency.

Table 20.15: Calculation of potential asset disposal savings

	Efficiency	Disposal value realised	2005-06 prices	Annual average
Pre-merger	35%	£23.2m	£29.6m	£7.4m
Merger	50% of post efficiency head office	£7.3m	£9.3m	£2.3m
Total		£30.5m	£38.9m	£9.7m

Table 20.16: Summary of potential merger and asset disposal savings

	Ofwat model approach	'Bottom-up' version one	'Bottom-up' version two	Industry norm (5% of turnover)
Labour cost savings		£21.0m	£24.1m	
Overheads savings		£15.4m	£17.7m	
Customer services savings		£4.8m	£4.8m	
Scientific services savings		£1.7m	£1.7m	
Procurement scale savings		£2.9m	£2.9m	
Total	£36.6m	£45.7m	£51.2m	£51.9m
Asset disposals	£9.7m	£9.7m	£9.7m	£9.7m
Overall total	£46.3m	£55.4m	£60.9m	£61.6m

³ Depot figure represents United Utilities' service delivery business as a whole; this incorporates North West Water.

⁴ North West Water's proposals regard plans to cut combined depots to five for entire United Utilities service delivery business.

⁵ Again, North West offices figure refers to United Utilities service delivery business.

⁶ Inflated at 5% per year to reflect, prudently, inflation in the property market.

In line with my approach to operating costs and capital efficiency, I have set the target for 2005-06 at 80% or £29.3 million. I have added property disposals to the potential for this to arrive at a target of £39 million by 2005-06.

e) Implementability

I am confident that good management will deliver my target of £39 million. Past examples of mergers support this, both in terms of the size of the target and the timescale for achievement.

Table 20.17 relates to English water companies following mergers. The percentage represents operating costs/revenue. The lower the level, the greater the level of efficiency.

Table 20.17: Effect of mergers on operating costs

Company	Year	2 years before	1 year before	1 year after	2 years after
Bournemouth & West Hampshire	1994	60%	59%	56%	56%
Three Valleys	1994	62%	60%	57%	51%
Sutton & East Surrey	1996	52%	52%	46%	49%

The table shows a marked expenditure decrease within the first two years after a merger.

Table 20.19: Sensitivity analysis of estimated merger savings – minimum scenario

Assumption	Comment
Head office staff number reduction estimated at 40% headcount	One organisation is being created from three. The new authority will require only one head office. A 40% reduction in size would assume that the revised head office would be some 60% bigger than a current head office.
Procurement savings taken as 5%	Scottish Water would be able to procure on a larger scale than any single authority. 5% would seem to be well short of the potential savings.
Scientific services expenditure will fall by 5%	Although the merger will not reduce scientific services by two thirds, there is scope for sizeable reductions in expenditure; 5% should be easily achievable.
Head office salaries and overheads are 10% higher	The information available to me suggests that this figure is well below actual extra costs incurred by head office.
The percentage of projected operating turnover for the empirical approach will be 3.5%	The evidence gathered from past merger cases suggests that this figure is below realistic levels of savings that can be attained.

These examples indicate that the majority of savings can be made early and that within three years Scottish Water should be able to realise almost all the full potential of the merger.

It is likely that significant asset disposals should be possible within the first two to three years. Recent examples of mergers in the English and Welsh water industry show both the scope of, and an acceleration in, asset disposals after mergers. The percentage figures included in Table 20.18 reflect the value of the disposals as a percentage of total revenue.

Table 20.18: Effect of mergers on asset disposals

Merger	Year	1 year before	1 year after	2 years after (%)
Bournemouth and West Hampshire	1994	0.4%	0.4%	13.8%
Three Valleys	1994	2.2%	0.9%	2.2%
Sutton and East Surrey	1996	0.4%	0.4%	3.5%
Essex and Suffolk	1995	0.9%	2.1%	2.6%
United Utilities	2001	n/a	18%	n/a

The sale of premises could, however, be influenced by the property market and I am therefore opting for a prudent, even phasing of the benefit.

f) Sensitivity and risk

My prudent assumptions should lead to the merger savings being higher than I have estimated. Any delay to the transition process would, however, reduce the available savings recommended.

I have carried out a sensitivity analysis of my bottom-up calculation in order to check that the Ofwat model was as prudent as it appeared. My assumptions for this sensitivity analysis are outlined in Table 20.19.

On the basis of my minimum scenario the efficiencies that would result from the merger are shown in Table 20.20. This would seem to confirm that the 80% of the Ofwat model answer is a very prudent target.

g) Monitoring delivery

My role as regulator is to set challenging, achievable targets, which promote customers' interests. It is not for me to direct how targets should be achieved. This is a matter for the board and management of Scottish Water.

It is my role, however, to monitor progress against targets, and to verify that service levels to the customer do not suffer as a result of management action to address inefficiency.

h) Conclusion

The proposed merger could act as a catalyst for change that will facilitate the full and effective coordination required for the authorities to achieve their capital and operating expenditure efficiency targets. In the medium term, the creation of a single authority would also generate additional efficiency savings, largely in relation to the amalgamation of head office functions of the three authorities. I have assessed the potential for these savings as £48 million. I have set a target of £39 million for 2005-06. The target is analytically robust and is supported by empirical evidence of mergers in the utilities and other industries. My sensitivity analysis demonstrates that the target is without question achievable.

Table 20.20: Summary of minimum merger and asset disposal savings

	Ofwat model approach	'Bottom-up' version one	'Bottom-up' version two	Industry low (3.5% of turnover)
Labour cost savings		£16.8m	£18.4m	
Overheads savings		£12.3m	£13.5m	
Customer services savings		£3.9m	£3.9m	
Scientific services savings		£0.4m	£0.4m	
Procurement scale savings		£2.4m	£2.4m	
Total	£36.6m	£35.7m	£38.6m	£35.0m
Asset disposals	£9.7m	£9.7m	£9.7m	£9.7m
Overall total	£46.3m	£45.4m	£48.3m	£ 44.7m

Section 4: Chapter 21

Costs: Spend to Save

a) Introduction

One of my priorities within this Strategic Review of Charges is to ensure that the efficiencies that I have identified are realistic and can be implemented within the period of this Review. I have tried to ensure that the targets are realistic by ensuring that the assumptions, which underpin the analysis are as robust as possible, and that they are prudent.

I have also included a very significant allowance within price limits for the costs of:

- achieving an efficient capital programme; and
- making the organisational and business process changes that will ensure that the operational cost efficiency targets are achieved.

The costs of achieving this efficiency have been termed Spend to Save. I am including Spend to Save as a discrete category of expenditure up to 2005-06 in order that the spending of these valuable resources can be properly monitored. Spend to Save comprises spending of both a capital and an operational nature. I believe that this will be important in securing long-term sustainable annual savings for customers.

It is important to note that Spend to Save is additional to any on-going spending within the authorities to achieve efficiency. The Spend to Save allowance should therefore be used to meet one-off costs of change rather than the continuing costs of performance improvement. As a separate line item in the budget, it will be possible to review the spending of this allowance. The most important issue from a customer perspective, however, is not when or if the allowance is spent, but that it is used effectively and does reduce annual costs in the future. I would expect that the Spend to Save should have a maximum payback of between two and three years. This would suggest that this Spend to Save allowance on its own will facilitate savings of between £70 and £100 million per year. This equates to between half and three-quarters of the targeted operating cost efficiency by 2005-06.

The operating efficiencies now being required in the Review period to 2005-06 will be a major step change. They will ensure that we narrow the efficiency gap by 80% between the level of efficiency in Scotland in 1998-99 and benchmark operating

costs in England and Wales. Spend to Save allows the closing of this gap to take place more quickly than would be feasible in the absence of a dedicated allowance.

i) Impact on customers

In this Review, I present a series of recommendations, which, I believe, will minimise bills for customers over the medium to long term and will give all of us, as customers, a public sector industry of which we can be proud. I therefore considered setting lower targets and not providing for Spend to Save in advance. This option may keep bills a little lower in the first couple of years, but it would lead to a much greater increase in later years and the price faced by customers by the end of the Review period would be higher. The Spend to Save allowance amounts to a total of £200 million over the Review period and compares to some £3.5 billion in revenues from customers. The impact of this investment for the future amounts to just over 5% of the total spending of the water industry in Scotland over the period 2002-06. By the third year the resulting savings will be higher than the Spend to Save allocation and these savings will continue to benefit customers over the long term.

ii) Impact on my Review

As explained above, I have included Spend to Save in the Review, because it is clearly in the interests of customers to do so. The introduction of Spend to Save has impacted on the Review in three main ways.

- Firstly, it has been necessary to determine an appropriate phasing of the Spend to Save allowance so that it can be used effectively and in order that efficiencies for customers are achieved as quickly as possible.
- Second, I have ensured that there is more Spend to Save available in years one and two of the Review period than total operating cost savings required. This means that the water authorities will actually spend marginally more money in these years than they would otherwise have spent.
- Third, I have established Spend to Save as a separate cost category with a view to being able to ensure post factum that the spending is achieving the desired benefits.

b) Implementation of Spend to Save

There are many elements of the efficiency targets that can be achieved relatively easily and without large one-off expenditure.

These savings would include items such as procurement and management of the authority. Other costs (such as exiting a lease) will be upfront costs, but will bring immediate and significant benefits. It is, of course, up to the management of the industry to decide how best to allocate these resources. I have consulted extensively with the prospective management of Scottish Water and with the management of the current three authorities to determine an appropriate phasing of the Spend to Save investment. The phasing is proposed to be as set out in Table 21.1.

I have allocated allowances of Spend to Save for each of the existing three authorities. As there is little difference in the

efficiency targets faced by each authority, there is no reason to provide a greater proportion to any single authority. I have therefore opted to split this Spend to Save on the basis of the number of domestic households served by each. This gives the split between the three authorities that is set out in Tables 21.2 – 21.4. There also does not appear to be any justification for a higher Spend to Save allowance for a merged authority.

I have tried to ensure that the total Spend to Save allocation in this Review is reasonable. At my request, therefore, each water authority prepared and submitted Spend to Save proposals for its area. In total, there was, inevitably, a desire to spend more

Table 21.1: Scottish Water

Years	2002–03	2003–04	2004–05	2005–06	Total
Operational costs	£40.0m	£85.0m	£25.0m	£0m	£150.0m
Capital investment	£15.0m	£35.0m	£0m	£0m	£50.0m
Total Spend to Save	£55.0m	£120.0m	£25.0m	£0m	£200.0m

Table 21.2: East of Scotland Water Authority

Years	2002–03	2003–04	2004–05	2005–06	Total
Operational costs	£12.4m	£26.4m	£7.8m	£0m	£46.6m
Capital investment	£4.7m	£10.9m	£0m	£0m	£15.6m
Total Spend to Save	£17.1m	£37.3m	£7.8m	£0m	£62.2m

Table 21.3: North of Scotland Water Authority

Years	2002–03	2003–04	2004–05	2005–06	Total
Operational Costs	£9.3m	£19.7m	£5.8m	£0m	£34.8m
Capital Investment	£3.5m	£8.1m	£0m	£0m	£11.6m
Total Spend to Save	£12.8m	£27.8m	£5.8m	£0m	£46.4m

Table 21.4: West of Scotland Water Authority

Years	2002–03	2003–04	2004–05	2005–06	Total
Operational costs	£18.3m	£38.9m	£11.4m	£0m	£68.6m
Capital investment	£6.9m	£16.0m	£0m	£0m	£22.9m
Total Spend to Save	£25.2m	£54.9m	£11.4m	£0m	£91.5m

than the £200 million that is included in this Review. However, the £200 million was likely to cover more than all of the Spend to Save investment projects, with a reasonable payback period, which the authorities have identified to date.

c) The current Spend to Save plans of the water authorities

The initial proposals for Spend to Save from the authorities offered a payback of slightly over two years. Their proposals covered all of the major costs that I would have expected, with the exception of property costs. I regard the information that has been provided by the water authorities to be a draft and subject to significant revision, and there is therefore little to be gained by reviewing in detail their proposals. There are three main areas that were included:

- information technology,
- voluntary severance,
- capital solutions.

The efficiencies projected through the Spend to Save initiative are independent of the savings that will become available if the Scottish Water merger is approved by the Scottish Parliament.

d) Experiences to date

There have been efforts to control rising costs in the water authorities by reorganisation since 1996. These reorganisational costs have been included in their Annual Reports and Accounts.

Table 21.5: Water authority employment reorganisation costs

Employment reorganisation costs	East	North	West	Total
1996–97	£4.8m	£3.0m	£2.8m	£10.6m
1997–98	£0.4m	£4.7m	£1.0m	£6.1m
1998–99	£0.6m	£0.0m	£2.6m	£3.2m
1999–00	£1.0m	£0.2m	£5.7m	£6.9m
2000–01	£9.5m	£3.3m	£16.8m	£29.6m
Totals	£16.3m	£11.2m	£28.9m	£56.4m

In the price determinations of 1994 and 1999, Ofwat excluded from price cap calculations any allowance, to be funded by customers' bills, for Spend to Save. The companies have been required to improve their efficiencies, both in operations and in capital investment, either by using external funds and/or by outperforming the efficiency targets set by Ofwat.

As discussed in Chapter 18, for the years to 2001 the English and Welsh companies have outperformed the efficiency targets placed upon them. The extent to which they have invested to achieve the savings required by the regulator has not been fully reported (in the private sector model, this is a matter primarily for each company). However an indication of relative scale can be obtained by totalling restructuring expenditure charged to their Profit & Loss Accounts. The total investment on non-capital items approaches £800 million since privatisation. No similar disclosure is required for investment in capital with the aim of reducing costs. It can, however, reasonably be estimated to be of a similar order of magnitude. This means that the privatised companies have spent around £1.6 billion in achieving their current level of efficiency. This is about £150 million per year for some 20 million households. In Scotland, the equivalent figures are £50 million per year for 2 million households. There is, of course, less of an onus on Spend to Save when there is less pressure to achieve efficiencies. However, the Spend to Save allowance I have included in price limits appears generous by comparison with the equivalent figures in England and Wales.

e) Spend to Save recommendation

I believe that this Spend to Save allowance is a further example of the prudent approach that I have adopted in trying to ensure that customers' bills are minimised for the long term.

The authorities are not able to go to the markets and borrow to fund an investment designed to save for the future (unless this is already allowed for within the authority's Resource Accounting Budget settlement). This means that their only source of funds for projects of this nature would be outperformance of my targets. While I do expect the industry to do better than I am projecting, I would prefer that there is a degree of flexibility and discretion given to management as to how they choose to use this outperformance. I therefore

believe that Spend to Save is appropriate. However, comparisons with total Spend to Save investment in England and Wales do highlight the conservatism of such a high allowance. I judge, however, that the customer interest is best promoted by the delivery of a more efficient industry over the period of this Review.

f) Current situation

The criteria for using the Spend to Save provision will be maximising the financial saving on an ongoing annual basis by 2005-06. It will be up to management to develop their existing proposals further and implement these successfully. They will have to justify the spending in this area and will have to be able to demonstrate the benefits to customers. Immediate attention in this area will be necessary, as only in this way will management realise the full scope of the targeted efficiencies by 2005-06.

g) Impact and monitoring of effectiveness

As noted above, I will monitor the spending of this allocation and will want to see clear evidence of good process (a proper investment appraisal) and a good result (cash savings). I will use periodic and annual accounting reports to understand progress throughout the Review period. It is important that customers' money, which is invested to minimise prices in the medium term and not in water assets, is seen to be justified. Econometric measurement, discussed in Chapters 7 and 9 will be undertaken to judge the extent of savings achieved in each year of the Review period. At the same time, I will monitor customer service levels and will consult with the quality regulators in order to ensure that the savings made are actually efficiencies.

Section 5

Customer Issues

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Section 5: Chapter 22

Customers: Improvements in Customer Service to date

a) Introduction

The interests of customers require me to find the lowest sustainable level of charges and to encourage an improved service. In the last section I discussed issues of costs and their impact on charges. The chapters in this section address customer issues.

The customer is central to all of the analysis that is done within my office, and this chapter reviews the progress that has been made to date in customer service. First, I outline some of the basic requirements of a water service to customers and the progress that has been made to date. I will then review the principal issues that domestic and non-domestic customers regard as important. The chapter continues with a summary of the progress that has been made over the past five years towards meeting the expectations of customers. Levels of service in Scotland are compared with the performance of the privatised companies in England and Wales. I will conclude by assessing the gap, which still remains to be closed. Chapter 23 looks towards the future and makes some suggestions about the action that could be taken to improve the service received by customers.

Customers do not often have cause to complain about their water and sewerage service. However, when they have had cause for complaint, the consequences have often been unpleasant and sometimes very serious. For most of us, most of the time, we have no desire to be aware of the water and sewerage industry and the massive infrastructure and complex process involved. It is a service that we assume will be provided, and we are content for it to be silent in this way.

Just under 58,000 complaints were recorded by the three Scottish water authorities for the period April to June 2001. This statistic would suggest that even if no one complained twice, fewer than 10% of customers are likely to have a reason to complain in any given year.

The board and management of the water authorities cannot, however, count on a passive approach from customers. Increasing water charges, the potential threat of competition and greater environmental awareness have all raised the profile of the industry. Customers are likely to become increasingly sensitive to the level of service provided. There is already some

evidence that customers are beginning to compare the service they receive from their water authority with that of their electricity, gas or telephone supplier.

b) The basic requirements of customers

The basic requirements of customers are that:

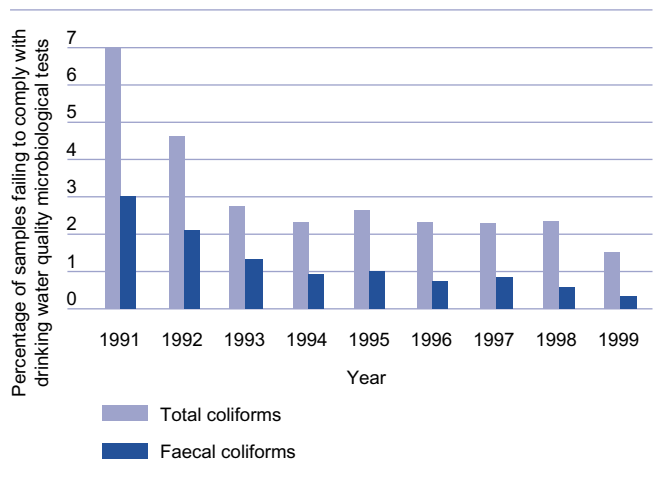
- public health is protected,
- sewage is properly disposed of,
- the water and sewerage service is available on demand.

i) Water quality

Customers will rarely mention water quality as a concern or an area where they perceive investment is required - unless they have first hand experience of a problem. Legislation and public health regulations exist in order that customers should not have to worry about these issues. Many of the outputs of the Quality and Standards programme exist to ensure improvements in public health. These are important to customers.

The 1990 Water Supply (Water Quality) (Scotland) Regulations set demanding standards for compliance. Compliance across Scotland has been improving but can still vary quite dramatically across the country. In general, rural areas have the most variable quality of water. This Quality and Standards programme will go a long way to addressing this issue¹.

Figure 22.1: Quality of drinking water 1991-1999²



¹ 41% of Quality and Standards investment programme is in rural areas.

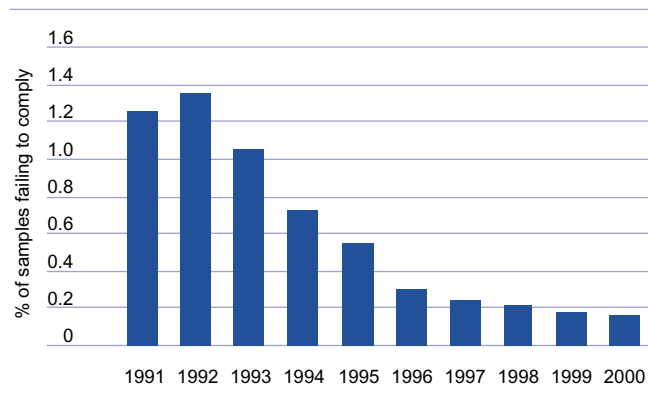
² Scottish Executive website: *Key Scottish Environment Statistics*.

The presence of coliforms (bacteria) in tap water causes a failure to comply with the desired water quality standards.

Despite the obvious improvements, work remains to be done on improving the quality of drinking water. The percentage of failures is very low, but it is important to compare performance with the standards achieved in England and Wales. It comes as a surprise to many in Scotland that the quality of water is better in England and Wales.

Figure 22.2 shows that the trend in water quality in England and Wales is improving from an already higher level.

Figure 22.2: Quality of drinking water (England & Wales): 1991-2000³



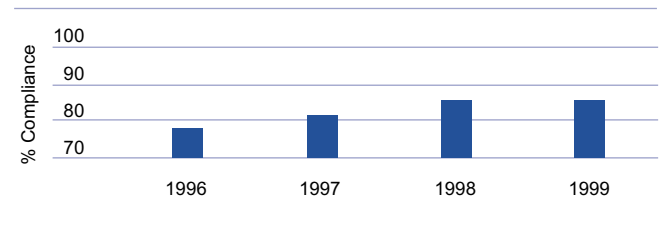
Of water quality tests carried out in 2000, 99.8% were compliant with the relevant water quality standards in England and Wales.

ii) Sewage disposal

The second basic requirement of customers is that there is adequate and effective disposal of sewage.

Figure 22.3 shows the compliance of sewage treatment works across Scotland.

Figure 22.3: Public sewage discharge consent % compliance⁴



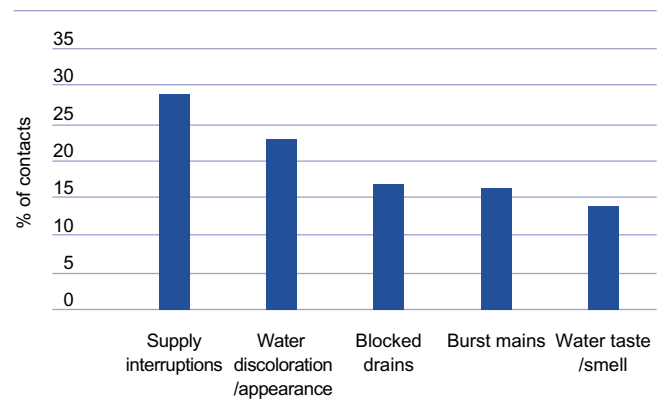
Performance has improved over the past four years. The investment to meet the Urban Waste Water Treatment Directive (UWWTD) will increase the compliance with discharge consents.

iii) Service available on demand

The third basic requirement of customers is to receive the water and sewerage service, and not have to worry about its availability.

Just over 15% of customers surveyed⁵ had had a reason to contact their water authority over the past year. Their top five reasons were as shown in Figure 22.4.

Figure 22.4: Reasons for contacting water authority⁶



Supply interruptions and water quality are two of the most frequent issues raised at my public meetings. Customers have understandable concerns when anything out of the ordinary happens to their water supply. The Quality and Standards

³ Drinking Water Inspectorate website *Drinking Water 2000 Report*.

Compliance with the standards specified in the Water Quality (Water Supply) Regulations 1989 over the last ten years.

⁴ SEPA website *Discharge Consent Compliance Statistics*.

⁵ The Water Panel (December 2000).

⁶ The Water Panel (December 2000) - Responses to question from those who had had cause to contact their water authority.

programme includes a major increase in asset maintenance and underground mains renewal. This should address many of these issues.

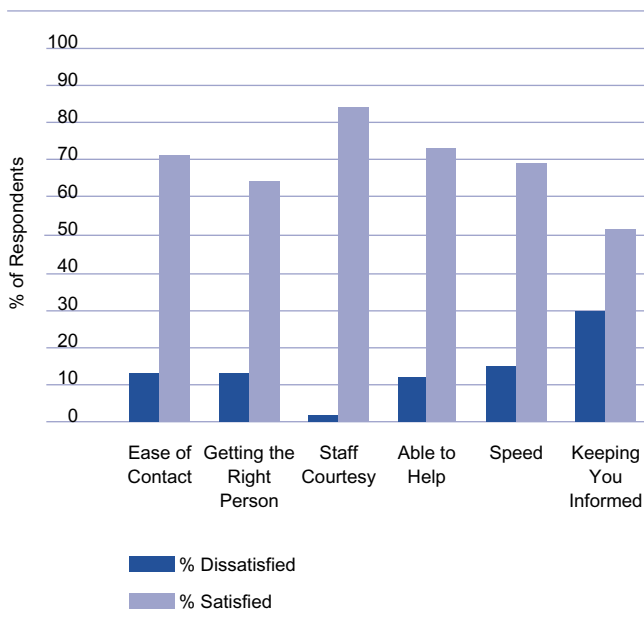
c) Additional requirements of domestic customers

Customers would appear to have three main service priorities that are mentioned frequently in public meetings. These are customer service, environmental performance and charging. I will address each of these in turn.

i) Customer service

The 15% of customers who contacted their water authority, were asked to express their satisfaction with the customer service provided. Fortunately, for most customers their issue is addressed but the results highlight that a number do not feel that their issues were effectively handled.

Figure 22.5: "How would you rate the quality of customer service you received in terms of the following?"⁷



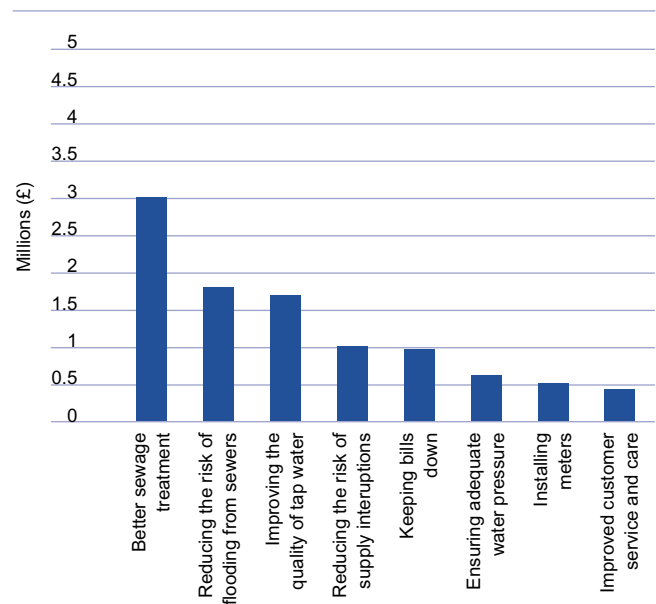
In particular, there was a significant minority of customers who felt that they were not kept informed during the handling of their complaint or problem.

ii) Environmental performance

In both public meetings and in research, customers consistently show great concern that the water authorities should continue to play an important role in protecting the environment.

Figure 22.6 below indicates the main priorities for investment. It is striking that issues such as sewage flooding which few of the recipients had experienced directly (30%), was a higher priority than customer service or indeed levels of charges. This would seem to confirm that customers want a reliable, silent service.

Figure 22.6: "If you had £10 million to invest in water and sewerage, what would you invest it on?"⁸



iii) Charges

Customers obviously want a water and sewerage service to be provided at as low a cost as possible. Many customers regard water as a free good, for which they should not have to pay. Some customers do demonstrate a willingness to pay more for environmental benefits, but others do not see the link between charges and investment.

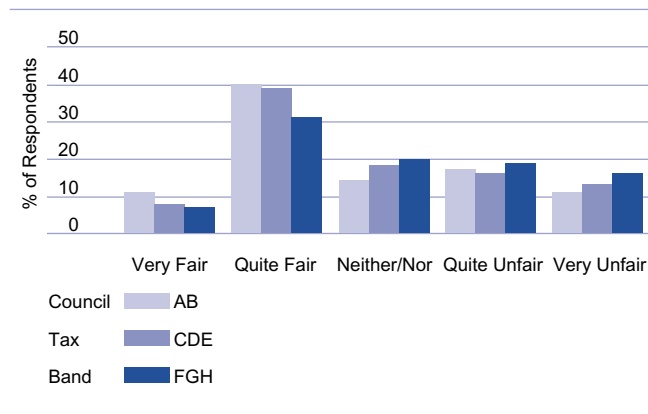
In the second domestic Water Panel survey, some 78% of domestic customers stated that they would be willing to see price increases of more than inflation to allow investment to take place.

⁷ The Water Panel (December 2000)

⁸ The Water Panel (May 2001)

This conclusion, however, seems to be slightly at variance with the views of these same customers when they were asked about the fairness of charge levels. The majority of those polled did not believe that current charge levels were fair.

Figure 22.7: “How fair do you think the amount you pay for water and sewerage charges is?”⁹



d) The requirements of non-domestic customers

The vast majority of non-domestic customers in Scotland use water principally for domestic purposes (cooking, hygiene and sanitary). It is therefore not surprising that their priorities should be broadly similar to those of domestic customers.

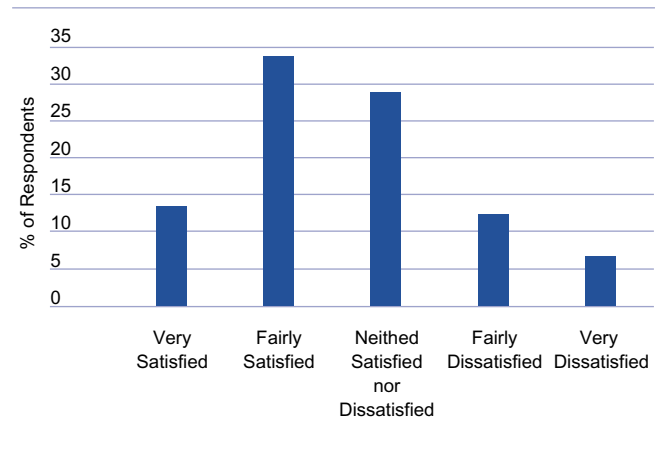
Even the relatively small number of customers who rely on water for their production seem to share the same three priorities of customer service, environmental performance and the level of charges.

i) Customer service

Most non-domestic customers seem to be fairly satisfied with the service that they are offered. However, a slightly larger percentage of non-domestic customers than domestic customers would seem to be dissatisfied.

In all of my meetings with the non-domestic sector, it has been clear that customers were unhappy with the current billing and metering arrangements. A number of examples were given:

Figure 22.8: Consultees were asked to rate how satisfied they were with the customer service provided by their water authority¹⁰



- accuracy of bills,
- timing of bills,
- billing transparency,
- meter reading,
- consumption monitoring,
- meter faults.

This would seem to explain, at least in part, the higher levels of dissatisfaction of the non-domestic sector. There has been a number of areas where improvement could have been made relatively easily. One clear example is that changes in charging policy are quite often not explained very clearly and the authorities can be slow to respond to the obvious enquiries that result. Many complaints received by my office concerned the issue of surface drainage charges in the North of Scotland Water Authority. Many of these complaints could have been avoided if a clearer explanation had been provided with the bill.

ii) Environment

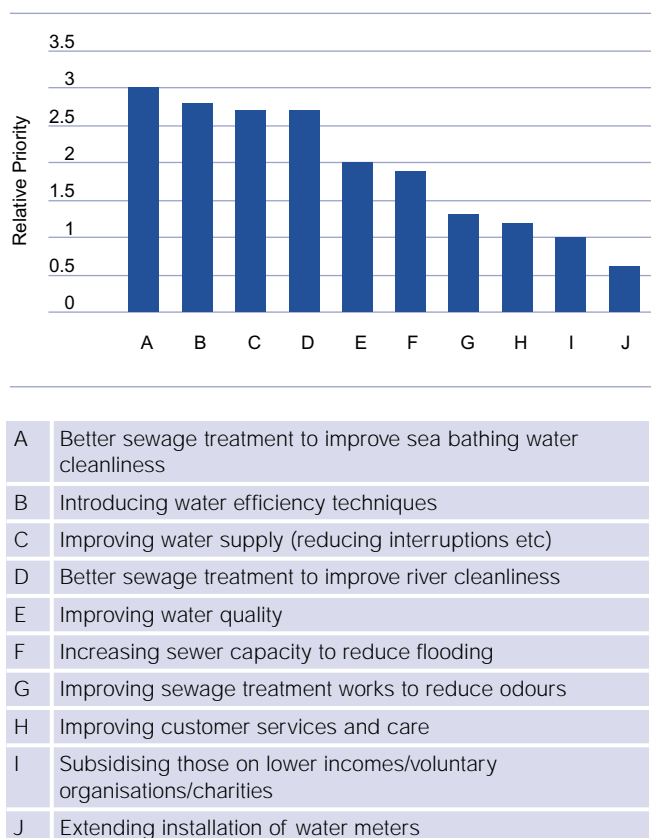
The investment priorities of non-domestic customers do not seem to differ markedly from those of domestic customers. This is perhaps one of the best indications that water and sewerage services are not something about which any customer (domestic or non-domestic) wants to have to worry. The

⁹ The Water Panel (May 2001)

¹⁰ Non-domestic consultation (refer to Appendix E for details)

likelihood is that responses to the non-domestic consultation reflect as much the priorities of the individual completing the questionnaire as the organisation that they represent. In many public meetings there has been no clear dividing line between domestic and non-domestic issues. The focus of non-domestic customers is again on the waste/sewage side.

Figure 22.9: Non-domestic consultation – investment priorities¹¹



iii) Charges

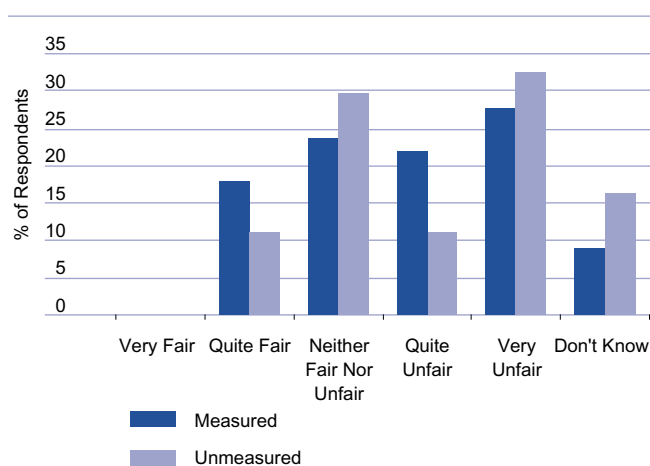
The non-domestic sector is much more aware of the level of charges for water and sewerage services because it is billed directly. I have already mentioned some of the billing issues, which are clearly a major concern for customers but charge levels are also clearly an issue.

The non-domestic sector in Scotland contributes a higher proportion of total revenues than is typically the case in England and Wales (see chapter 13). This will no doubt also be a factor in concerns raised by non-domestic customers.

Over three in four non-domestic customers claimed that they would be willing to see increases at a rate higher than inflation to allow investment to take place.

This again does not seem to be fully consistent with views on the fairness of charges. No-one believed that charges were very fair and less than one in seven (on average) believed them to be fair. Just over 49% of metered and just over 43% of unmeasured customers believed that current charge levels were quite unfair or very unfair (see Figure 22.10).

Figure 22.10: Non-domestic consultation – members were asked “How fair do you think the amount you pay for water and sewerage charges is?”¹²



e) The present level of service

Significant improvements in customer service have been introduced over the last two years. This is discussed in more detail later in this chapter.

Regulatory pressure both in trying to ensure a satisfactory resolution of a complaint and in objective monitoring of performance can support this improvement in customer service. However, real improvements in service do require customers to complain about or comment on their areas of concern. These improvements that have come about to date result from customer pressure for improvement.

One of the most striking comments in one of my first public meetings highlighted the difference in guaranteed service

¹¹ Non-domestic consultation (refer to Appendix E for details)

¹² Non-domestic consultation (refer to Appendix E for details).

standards in England and Wales and in Scotland. I am pleased to note that these same standards are now in place.

I am able to report that over the past year, compliance with the Guaranteed Minimum Standards has improved and so too has the quality of contact handling. I hope that compliance with the standards in Scotland will continue to improve. There is also now a clear Major Incident Policy (which was introduced in October 2000), which should ensure that customers know what to expect in the event of a major incident.

There is, however, much still to be done. Levels of service in Scotland do need to be improved and the price limits that are being set reflect the need for this improvement, and the expectation that it will be delivered.

f) Progress to date

i) 1996-99

There were several improvements in the customer service provided by the water authorities in the period from 1996-99. These improvements are summarised below.

Code of Practice

The water authorities introduced their first individual Codes of Practice in April 1996. A Code of Practice is a statement of the levels of service, which the authority expects to deliver to the customer. The first Codes of Practice the authorities produced were not particularly customer-friendly or ambitious in terms of the service promised.

However, competition quickly developed between the water authorities, and they each tried to tighten standards and have the best Code of Practice. By 1999 quite significant improvements had been made, although levels of service were still well behind that offered by other utilities.

Guaranteed Standards

The service promised in each Code of Practice was an aspiration – not a guarantee.

In the first Code, there were only four Guaranteed Standards:

- Responding to written complaints within 15 days and providing a full reply within 30 days.

- Keeping appointments made in writing.
- Installing a meter within 15 days.
- Responding to sewer flooding.

The Guaranteed Standards were backed with a £10 compensation payment that had to be claimed by customers. The Guaranteed Standards were well below the levels of service offered by water companies in England and Wales and by other utilities.

By 1999 the water authorities recognised that their initial Guaranteed Standards had to be tightened. This resulted in the Guaranteed Standards set out in Table 22.1 being introduced between 1996 and 1999.

The improvement in standards by each authority was marked. However, there were still some quite considerable differences between the three authorities in the level of service, which was offered to customers. This was very confusing for those customers who dealt with more than one Water Authority.

Environmental improvement

Since their creation in 1996, the water authorities have made significant investment in improving both environmental and public health performance. The main areas of focus have been:

- Disposal of sludge;
- Clean beaches;
- Quality of life issues (odour, amenity, wildlife preservation, etc.);
- Drinking water disinfection.

Each of the water authorities stopped dumping sludge at sea by the end of 1998 in accordance with the Urban Waste Water Treatment Directive.

By 1999, SEPA had identified 60 bathing water sites in Scotland. In the summer of 1999, 53 sites passed the mandatory (minimum acceptable) standards. Water quality issues were discussed earlier in this Chapter.

ii) 1999-2001

Codes of Practice and Guaranteed Minimum Standards

The single biggest improvement in customer service during the

Table 22.1: Scottish water authority standards, April 1999

	East	North	West
Keeping appointments	Guarantee to keep all appointments made in writing	Guarantee to keep all appointments made in writing	Guarantee to keep appointment or notify customer of any change to appointment
Restoring supplies after a planned interruption	Supply restored no later than 1 hour after the time stated	Supply to be restored by the advertised time	Supply restored no later than 1 hour after the time stated
Restoring supplies after an unplanned interruption	Trunk main – supply restored within 60 hours Other mains – supply restored within 30 hours	Trunk main – supply restored within 48 hours Other mains – supply restored within 24 hours	Trunk main – supply restored within 60 hours Other mains – supply restored within 30 hours
Installing a meter	Meter fitted within 15 working days of receiving payment and signed agreement form		
Responding to written complaints	Response within 10 working days, full response within 25 working days	Response within 10 working days, full response within 25 working days	Acknowledge within 5 working days Response within 10 working days, full response within 25 working days
Responding to telephone complaints			Call back not later than end of next working day Response within 10 working days, full response within 25 working days
Responding to non-domestic billing enquiries	Full response within 25 working days	Response within 10 working days, full response within 25 working days	Response within 15 working days
Sewer flooding	Domestic customers – the gross annual sewerage charge Non-domestic customers – the annual sewerage charge (not including any trade effluent charges), up to £1,000 in any one financial year	Domestic customers – the full annual sewerage charge Non-domestic customers – the annual sewerage charge (not including any trade effluent charges), up to £1,000 in any one financial year	For households - £100 Non-household – the annual sewerage charge (not including any trade effluent charges), up to £1,000 in any one financial year

last two years has been the introduction of the Guaranteed Minimum Standards.

The criteria for the standards were based on an analysis of feedback from our consultation process. This analysis identified what had been achieved, what could be achieved at reasonable cost and what customers had told us. The proposed standards were outlined in a consultation document, *First Steps in Improving Customer Service* (18 May 2000), which received significant support from those who responded.

Figure 22.11: Feedback from consultation process



The water authorities and I jointly launched the Scotland-wide Guaranteed Minimum Standards on 1 October 2000. The Guaranteed Minimum Standards are as follows:

- 48 hours notice of a planned interruption to your water supply likely to last more than four hours.
- Restoration of supply at stated time following planned interruption of water supply.
- Restoration of supply within 12 hours of an unplanned interruption (48 hours for a trunk main interruption).
- Following sewer flooding in your home or business premises - clean up the mess and refund your full annual sewerage charge for each incident (up to £1,000) (for business customers this excludes any trade effluent charges).
- Respond fully in writing to a written complaint within 10 working days.
- Respond fully to a telephone complaint where a written response is requested within 10 working days.
- Respond to request to change your payment method within 5 working days (where direct billed only).
- Respond to other billing queries within 10 working days (where direct billed only).
- Keep appointments made for a morning or afternoon and offer a two hour time band if requested.

Failure to comply with any of these standards entitles the customer to a £20 compensation payment (except in the case of sewer flooding).

These standards brought Scotland in line with the standards offered in England and Wales, and indeed in some areas exceeds them.

Major Incident Policy

Fortunately, major problems with the service provided to customers are rare. However, if it does happen, this is exactly the time that most customers will want to understand the problem and what the consequences may be. This can put a strain on even the best customer service organisation. In my consultation on the Guaranteed Minimum Standards, I also suggested the need for a Major Incident Policy. This too received significant endorsement.

I regard the introduction of this Major Incident Policy as a major advance in customer service. The Policy sets out guidelines of what a major incident is, what to expect if it occurs and what compensation may be payable. Details of this Major Incident Policy will be required in any new Code of Practice from the industry. It is, of course, vital that customers are made aware of this Policy and the service that will be available.

The guidelines that trigger a major incident are as follows:

- An incident that affects more than 2,500 properties at any one time for at least 24 hours continuously (water related); or affects 100 properties (sewer flooding incident).
- An incident that affects the supply of water to premises through either an interruption to supply or restriction to the normal use of water because of poor quality or contamination.
- An incident to which the Scottish Executive requires a special response.

An information update will be provided to customers at least every 48 hours and alternative supplies will be provided within 24 hours.

Compensation can be claimed of between £20 and £100 depending on the nature of the incident and the length of time the authorities failed to deliver the standard of service required by the Major Incident Policy.

Key account management

Non-domestic customers appear to have been taken for granted by the water authorities until relatively recently. In particular, some of the largest companies in Scotland (and some of the largest employers) did not receive the customer service from their water authority that ought to have been forthcoming.

I visited one of the largest customers in Scotland in Spring of 2000. Their visitors' book showed that they had been visited by some of the largest English water companies, yet it transpired that they had never been visited by the senior management of the water authority in whose area they were located.

It was also clear from my research that non-domestic customers require a tailored service. For many large customers, the service provided and water authorities' responsiveness to their needs is almost as important as the absolute price charged. I responded to this by organising a seminar on customer service. This seems to have supported large customer pressure for a key account service.

Key account management does now exist but it is at a very early stage of development in the water industry in Scotland. Only East of Scotland Water Authority has made a significant investment in relationship management with customers and this is quite recent. This lack of development has limited the authorities managers' understanding of and response to the concerns of customers.

The introduction of key account managers is an important first step towards addressing the needs of large customers, although of course any tailored service must be properly priced and costed.¹³

g) Areas for improvement

Despite the very considerable improvement, which the water authorities have made in customer service, there is still some way to go before they match the responsiveness of other utility service providers. There are a number of specific areas where the water authorities do not yet meet even quite basic requirements of customers.

i) Basic requirements

I discussed earlier the need for a safe, reliable water supply. Unfortunately, many customers still experience drinking water quality failures, supply interruptions or flooding from sewers. Table 22.2 sets out the findings of the most recent performance reports.

ii) Customer service

Key monitoring of complaints and customer service performance indicates that significant action is still required to improve performance. This monitoring highlights a number of areas of concern:

- lack of follow-up of complaints;

Table 22.2 Performance of Scottish water authorities – January – March 2001

Results for quarter (January to March), 2000/01	East	North	West	Northumbrian Water ¹⁴
Total planned interruptions per 1000 connected properties	0.74	0.49	0.68	0.045
Total unplanned interruptions per 1000 connected properties	0.41	1.22	0.43	0.041
Total Properties affected by planned or unplanned interruptions	19,009	32,321	39,016	11,987
Percentage of connected properties	2.6%	6.5%	3.4%	1.1%
Sewer flooding incidents reported	1,191 0.16% of connected properties	44 0.01% of connected properties	3,381 0.29% of connected properties	452 0.018% of connected properties
Internal sewer flooding incidents due to water authority Sewer per 1,000 connected properties	0.03	0.03	0.1	0.06

¹³ See earlier discussion in Chapters 11 and 14.

¹⁴ Ofwat, *Levels of service for the water industry in England and Wales 2000-2001 report*, July 2001. Tables 9, 10 and 12. Also Northumbrian Water's web site: www.nwl.co.uk.

Table 22.3: Scottish water authority compliance with complaint standards – January – March 2001

Results for Q4 2000-01	East	North	West
Compliance with written complaints standard	85.5%	99.5%	90.6%
Compliance with telephone complaints standard	88.9%	100%	94.6%

- a need for more clarity in letters;
- lack of proper notes of telephone calls and meetings;
- lack of 'friendliness' in letters;
- a need to use 'Plain English' in letters;
- failures to provide contact details.

My review of the handling of billing complaints shows this to be a particularly weak area and certainly confirms the concerns expressed by the non-domestic sector.

How well complaints are handled is particularly important, as a complaining customer is likely to be particularly sensitive to any further service failures. The performance of the North of Scotland Water Authority in this area is quite considerably better than that of the other two authorities. One of the aims of the proposed Scottish Water must be to improve urgently customer service standards in the East and West to the level achieved by the North.

Table 22.3 sets out the performance achieved in the final quarter of 2000-01.

To put these statistics in perspective, compliance in England with a similar written complaints standard ranges from 93.4% (the worst) to 100%. (There is no telephone complaints standard in England and Wales.)

My monitoring of complaints also assesses the quality of the response provided, not just the timeliness. I introduced Quality Performance Assessment Audits in 2000 to measure the quality of Guaranteed Minimum Standards and Code of Practice compliance by the water authorities. The quality of responses was measured using objectively set criteria for which there is a clear yes or no outcome. I have extended this audit format to areas of particular concern, such as billing.

Audit results to date suggest that the water authorities need to improve their performance significantly. I provided detailed

Table 22.4: Performance of Scottish water authority call centres – January – March 2001

Results for Q4 2000-01	East	North	West
Calls answered in 0-15 seconds (main helpline, office hours)	87.8% (0-16 secs)	91.0%	83.6%
Calls answered in 0-15 seconds (main helpline, out of office hours)	75.7% (0-16 secs)	87.4%	74.6%
Effective call rate (main helpline, office hours)	96.8%	97.2%	93.5%

feedback to each of the three authorities and to the Scottish Executive. From next year I propose to publish an annual assessment of customer service in Scotland.

There has been an improvement in the handling of written complaints from customers. The most marked improvement has been by the West of Scotland Water Authority, but even with this improvement, the level of service provided to customers is not satisfactory. Under one-third of responses pass the audit.

The authorities' response to billing complaints is even worse. Across Scotland only 3% of customers received responses that satisfied the audit standard. It is very clear that considerable improvement is necessary.

iii) Call centres

My assessment of call centre performance comprises a series of qualitative measures, as well as the obvious quantitative measures (such as time taken to answer a call).

Table 22.4 sets out the performance against the quantitative targets achieved in the final quarter of 2000-01:

Each of the call centres scored highly in terms of courteousness and professionalism.

My audit highlighted, however, that there were some disappointing gaps in knowledge. These included a lack of awareness of the Guaranteed Minimum Standards and their application.

The audit also showed that the call centre and operational staff did not always provide a seamless service. This was characterised by poor updating of outstanding customer service problems.

iv) Key account management

Key account managers are responsible for understanding the key needs of the largest customers and ensuring that the service delivered is appropriate. Consultation with a number of large users revealed that the authorities have begun to move in the right direction towards this important role in the retail function. However, there is still significant progress to be made. The following issues were highlighted during our consultation:

- a lack of contact;
- scope and resources of each key account manager – are they responsible for too many individual accounts?
- consistency - multi-site customers reported having different key account managers at different sites and felt that this caused problems with a lack of consistency of response and policy interpretation;
- lack of awareness – a number of customers were unaware of the existence or availability of the key account management service.

In the majority of cases key account management is at a very early stage of development. The authorities need to invest in relationship management to ensure that they understand and address the concerns of their large customers. A customer's lack of confidence in their supplier may force the customer to pursue other options.

h) Conclusions

It is clear that the water authorities have made progress since 1996, and that the pace of this progress has increased since 1999. However, there is still considerable improvement that can be made, particularly in the areas of billing and communication.

It became very clear during our consultation with non-domestic customers that they were not satisfied with the authorities' billing and collection process. This does raise the question whether or not it would be sensible for the proposed Scottish Water to manage the billing of domestic customers.

The progress made by the authorities has to continue; there is a need to improve compliance with the Codes of Practice and to explain service failures better to customers. I believe that the monitoring systems are now in place to hold the industry to account. My proposed customer service reports (detailed in chapter 23) will ensure that customers are aware of the levels of service provided.

Section 5: Chapter 23

Customers: Future Improvements in Customer Service

a) Introduction

One of my key aims in this Review is to identify areas where the water authorities can, and should, improve the service they provide to their customers. In Chapter 11, I discussed the potential development of competition in the water industry. Whilst in economic terms the impact of competition on the industry is not likely to be significant, the advent of retail competition is likely to encourage better customer service. In future there may well be a number of companies that will offer a water service to customers. These companies could also have an advantage in that they will offer other services that the customers may want. For example, Scottish Gas even now offers road-side assistance, insurance, banking and credit card services, as well as the basic utility services of gas, electricity and telephone. They may well seek to enter into the water sector at some point in the future.

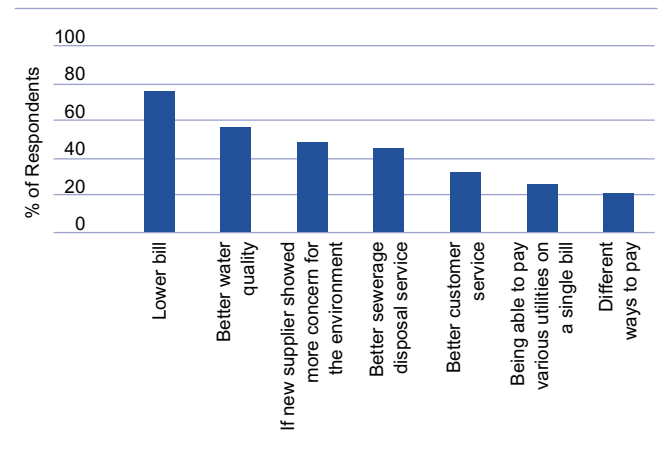
If the water authorities are to be successful in the retail of water services, it is vital that they focus on improving performance and that they listen to the opinions of the end customers.

Customer service accounts for a small proportion of the total cost of providing services to customers. It will therefore be difficult for a new entrant to the water market to make an attractive financial offer (ie. money off the bill) to water customers to make them want to switch.

When there is a choice, decisions to move supplier are more likely to reflect a customer service failure. It is unlikely that a new entrant could reduce the price of an average bill by more than about £10-£15, notwithstanding the economics of scale and scope that they are likely to enjoy. They may, however, be able to win over customers on their customer service.

Figure 23.1 illustrates this point.

Figure 23.1: Reasons to switch supplier if alternative available¹



Not surprisingly, 74% of respondents to the survey listed a lower bill as a reason to switch supplier. It is, however, interesting to note that nearly a third of the Water Panel believed that an improvement in customer service could entice them to switch supplier. Closer examination of the responses to this question shows that if a new entrant were seen to be more environmentally friendly or offer better customer service (by offering different ways to pay or by offering bundled services) then customers may switch. This confirms trends in other utility services, where customers have shown a demand for green energy, and seem to have been prepared to pay slightly more for the convenience of a bundled service.

This chapter identifies a number of areas where improvements could have an important impact on the customer's perception of value.

b) Key improvements

The water authorities have to continue to improve their compliance with water quality regulations and environmental legislation. The authorities should also pay attention to how customers perceive these improvements. For example, many customers think the water is poor quality if they can taste or smell chlorine. It is important that the water authorities continue to explain why the water is chlorinated and seek out innovative solutions.

¹ The Water Panel (December 2000).

Most customers do not have a reason to contact their water authority until something goes wrong. The ongoing investment programme should reduce the number of supply interruptions and water quality failures. This will in turn reduce the number of negative experiences and consequently should significantly lower customer dissatisfaction.

There are four main areas where improvement by the water authorities would significantly improve customer perception of the value for money they receive. These are improving the Guaranteed Minimum Standards, introducing a priority register, addressing billing issues and meeting the needs of the non-domestic sector.

i) Guaranteed Minimum Standards

I would like to see improvements in the Guaranteed Minimum Standards. These should be constantly developed and reviewed to reflect the changing needs and expectations of customers. However, my review of current compliance with the standards would suggest that the primary focus at this time needs to be on compliance, not on tightening the standards. I would not want to set standards at a level that cannot be achieved. This could lead customers to expect a level of standard that cannot be delivered cost-effectively.

Current performance against the standards is highlighted in Table 23.1 and 23.2.

Table 23.1 demonstrates that current compliance is not sufficiently high to justify a tightening of any of these standards.

New standards

There are two areas where new standards would seem to be appropriate. The first is the introduction of a standard for dealing with ingress of water into gas mains. This has been developed jointly by my office, the authorities, Transco and Energywatch. Water ingress into gas mains is a relatively rare occurrence but it can cause significant difficulties for an owner of gas appliances. There is therefore a clear need to have a policy on how this situation should be handled. This is particularly important because an effective resolution for the customer depends upon successful coordination between several organisations.

In responses to my consultation on the Guaranteed Minimum Standards, there was also a clear desire for a water pressure standard. Such a standard is in place in England and Wales, but the standard is quite complex and can be difficult to monitor. I was therefore reluctant simply to introduce this same standard. It is important that any water pressure standard is meaningful to customers and provides a clear baseline of the service that the customer can expect. I will work with my Consultative Committees and the industry to frame an appropriate standard with a view to introducing this standard no later than the inception of the proposed Scottish Water or April 2002.

The standards offered should not be limited to those listed above. There may be a clear customer desire for other standards and it is appropriate that the cost and benefit of providing this service should be objectively assessed.

Table 23.1: Water authority guaranteed standards

	East	North	West
Number of Guaranteed Standard payments	369	32	452
Number of Guaranteed Standard payments per 1,000 connected properties	0.51	0.06	0.39
Amount paid under Guaranteed Standards	£19,147	£3,425	£13,292
Amount paid under Guaranteed Standard per 1,000 connected properties	£26.41	£6.88	£11.54
Overall compliance rate	84.7%	99.1%	97.7%

Table 23.2: Water authority standards

	Compliance		
	East	North	West
Keeping appointments	96.1%	100%	95.9%
Telephone complaints	88.9%	100%	94.6%
Written complaints	85.5%	99.5%	90.6%
Billing enquiries (direct billed)	79.1%	99.9%	98.3%
Change in payment method	100%	100%	94.4%
Notice of planned interruptions of 4hrs+	97.8%	82.8%	100%
Restoration after planned interruption	99.6%	87.7%	97.9%
Restoration after unplanned interruption	97.3%	97.6%	98.3%
Sewer flooding	98.2%	100%	100%
Septic tank desludging requests (E)	99.8%	-	-
Meter option requests (E)	-	-	-
Meter survey (N)	-	95.7%	-
Meter installation (N)	-	100%	-
Pay GSS/GMS within 20 days (N)	-	100%	-
Meter application (W)	-	-	93.0 %
Meter installations (W)	-	-	93.7%

Differences in standards

The only other area that I consider needs to be addressed as a priority is the difference in service standards that exists at present between the three authorities. I believe that it is important, irrespective of whether the proposed Scottish Water is endorsed, to remove the differences in standards that apply in each of the authorities. I do not want to see standards averaged down, and will be looking for each authority to address anomalies between its Code and best practice. Similarly, if the creation of Scottish Water is approved this should include best practice from each of the existing Codes of Practice.

Monitoring performance

My office's commitment to improving customer service depends upon the continuing review of standards offered elsewhere. My analysis of customer service standards is not limited to the utilities, although these companies (and in particular the English and Welsh water sector) are likely to offer the most comparable and applicable standards of service.

There are a number of examples of best practice available from the service standards of the privatised companies. These standards exceed the minimum levels set down by Ofwat. Table 23.3 highlights some sample standards:

Table 23.3: Examples of best practice offered in English and Welsh companies

Service	Offered by
Set compensation when boil water notice necessary	Severn Trent Water, South East Water, Wessex Water
Reduction in charges if inconvenienced by high water pressure	Yorkshire Water
Reduction in charges if more than 3 unplanned interruptions totalling over 15 hours in one year	South Staffs Water, Yorkshire Water
Repairing manholes within 24 hours if they are dangerous, 5 working days otherwise	Anglian Water
Offer to collect payments from customers home	Hartlepool Water, Wessex Water
Charges set aside for 1 to 12 months if only resident is hospitalised or similar serious long-term disability	Thames Water
Set compensation if appointment time missed	Bristol Water, Northumbrian Water, Thames Water

My office will test these standards with my domestic Water Panel. I will want to be sure that there is sufficient customer demand for these new standards.

It may be appropriate for Scottish Ministers to consider the introduction of a standard similar to that offered by Thames Water in setting aside charges if the only householder is in hospital for an extended period.

ii) Priority Register

I am currently working with the industry on the introduction of a 'Priority Register'. This is an initiative to address the needs of customers who are vulnerable and may have particular difficulties if there is a water supply problem. I plan to establish a register, preferably in conjunction with other utilities, of these customers with particular needs. This should help ensure that they receive the service they require. This may range from something as apparently insignificant as a password scheme for staff visiting their home, to special assistance to customers with a medical condition.

iii) Domestic billing

There has been much debate about whether the water authorities should bill domestic, unmeasured customers. Currently, these customers are billed for water and sewerage services by the local authorities.

The water authorities pay local authorities £11.5 million each year to administer billing of these customers. This means that around 3% of domestic revenues is currently spent on billing and collection.

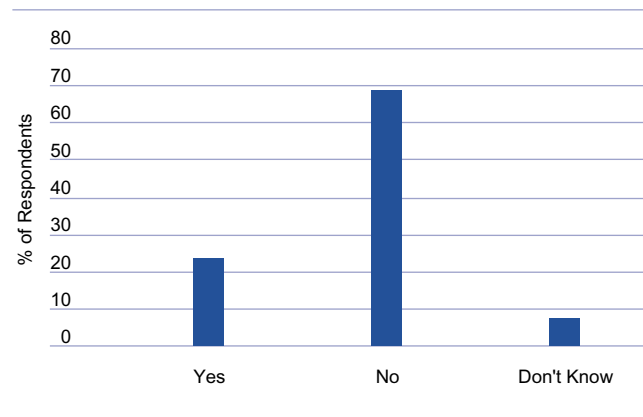
I asked the domestic Water Panel for their views about how domestic unmeasured customers should be billed for their water service.

There would therefore not seem to be any real desire from customers to receive a separate bill.

I also asked two further questions concerning methods and frequency of payment. The results are set out in Figures 23.3 and 23.4.

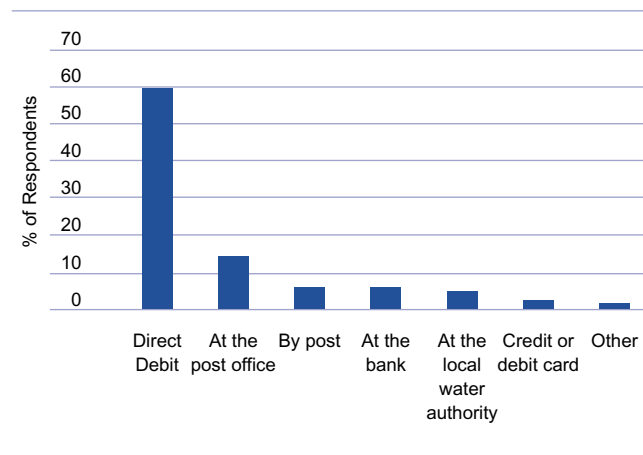
Not surprisingly, most customers would prefer to pay by monthly direct debit. It is important, however, to ensure that support is given to those who may have difficulty in paying. The

Figure 23.2: Responses to the question “Domestic water and sewerage charges are currently billed with the Council Tax. Would you prefer it to be a separate bill?”



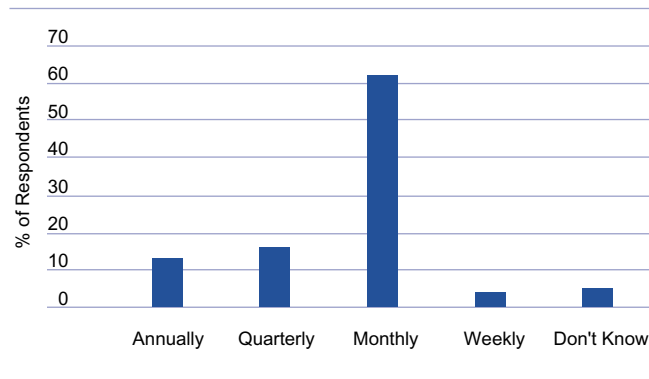
quite high percentage of people who would like to pay in person or at a post office may indicate that there is a need for some extra support. I address issues relating to the affordability of water charges in Chapter 24.

Figure 23.3: Responses to the question “How would you prefer to pay your bill?”



The costs associated with managing retail customers in-house are potentially significant. The costs of billing and customer information systems are very high and there is a problem of non-payment by a significant proportion of households. These costs are likely to place the proposed Scottish Water at a competitive disadvantage to a new retail entrant to the industry. It would not seem to be appropriate, therefore, for Scottish Water to bill domestic customers directly. This is likely to be cost ineffective

Figure 23.4: Responses to the question “How often would you prefer to be billed?”



and moreover does not seem to be a priority of the customer base. This does not mean that the billing of domestic customers has to remain with the local authorities. There may be other opportunities in the form of partnerships or outsourcing contracts, which offer a better and a cheaper level of customer service. Either the local authority or the outsourced option may well offer better value for money for customers.

The performance of the three authorities to date in managing direct customer billing has not been encouraging. The results were outlined briefly in Chapter 22. This would seem to confirm further that direct billing of the domestic sector would not be in customers' interests.

iv) Standards for the non-domestic sector

The current Guaranteed Minimum Standards apply equally to domestic and business customers. However businesses, particularly larger businesses, may find these standards do not address their main concerns.

I have discussed this issue with my Large User Group. The initial view was that there should be a set of minimum standards that would apply for the largest customers. However, upon further study we found that larger businesses are likely to have very specific and varied needs. Although all large users valued issues such as reliability of supply and transparency in tariffs, their particular requirements were often quite different. For example, a large effluent discharger may seek to have more frequent samples of effluent tested. It would therefore be

difficult to develop a set of standards that adequately meet the requirements of all. This view was endorsed by my Large User Group. Our suggested solution is that there should be more service level agreements.

c) Monitoring

My office will continue to monitor the level of service available to all customers. I will continue to use consultations with customers, the Water Panel and performance audits to help me understand customer priorities. This will ensure that new standards are both achievable and relevant.

I believe that monitoring service delivery is crucial to improving customer service. It is essential that the service providers understand that customer service failures are recorded and that pressure will be applied to ensure a proper resolution of any complaint.

d) Publicity and keeping customers informed

There is a clear desire from customers to know how well their water supplier is performing. There is a lot of information available on water quality, environmental compliance and customer service levels, but it is sometimes difficult for customers to gain access to the information. When customers were asked which additional services they would like the water authorities to provide, a desire for performance information was expressed.

My office therefore proposes to publish an annual report on the customer service performance of the Scottish water industry. This report will set out the levels of service provided by the industry in a number of key areas of customer service.

Where company performance is consistently below an acceptable level, the water authority will be asked to set out the reasons for its poor performance, and the actions that they propose to take to improve the service.

This report will be similar to the Level of Service report published each year by Ofwat.

e) Conclusion

Customer expectations of service providers are becoming ever more demanding. These expectations are driven by the competition to win or retain customers in other sectors of the economy such as food retailing, financial services and in other utilities.

During the next four years while charges still have to increase, it is crucially important that customers begin to see the benefits of proper investment in the industry. This will require the industry to continue pro-actively to explain the need for investment and the costs of delivering water on demand to the tap. Improved customer service, especially in terms of managing contacts (whether written or oral), is likely to be one important way of showing customers that the service really is being improved.

I will give credit when the industry does achieve the level of service that the customer has a right to expect. I will also ensure that any shortfalls in levels of service are immediately highlighted to all stakeholders.

It is clear that there remains much work to be done to improve customer service and meet customer expectations. My office will continue to use consultation and analysis to understand what customers want and need.

Section 5: Chapter 24

Customers: Improving Revenue Collection and the Affordability of Charges

a) Introduction

Chapter 13 examined the current and potential future composition of the Scottish water industry's revenue. In that chapter I briefly mentioned the issue of non-payment of water and sewerage charges by domestic and non-domestic customers. The scale of this bad debt problem within Scotland is significant and, as highlighted by the Transport and Environment Committee, needs to be addressed¹. This chapter discusses the bad debt problem in Scotland and the situation in England and Wales.

Collection rates from the non-domestic sector are wholly within the control of the water authorities. Domestic water and sewerage charges are collected by local authorities, along with Council Tax, on behalf of the water authorities. Improving collection is likely, therefore, to require a partnership approach between all stakeholders.

There are a number of initiatives that could improve collection from non-domestic customers. These include better communication, better billing and collection, a generally more business-like approach and more cost reflective tariffs.

The resolution of non-payment by the domestic sector is likely to prove more problematic. The impact of non-payment of charges from the domestic sector does materially affect bills and needs to be resolved. It will require helping those who cannot pay and ensuring that those who refuse to pay are held to account.

There are a number of initiatives that would assist those domestic customers who have difficulty in paying. The current transitional affordability scheme, launched earlier this year by the Scottish Executive², will also undoubtedly help. In addition, ensuring that charges are affordable will be key if customers who can, but refuse to, pay are to be held to account. Their refusal to pay is increasing, perhaps materially, bills to other domestic customers, including vulnerable customers who genuinely struggle to pay, yet do. The issue of affordability came to the fore after my interim Review and the large, but necessary, increases in customer charges that followed. Poor collection rates are, however, not new and have been an issue

for the last several years. These collection rates do not appear to have worsened as a result of the increased charges.

I have noted the criticisms that have been made of the affordability initiative introduced by the Scottish Executive. I believe that the scheme was as targeted as possible, given the information that was available at the time and recommend that further analysis of the affordability of charges is undertaken. This analysis can help to ensure that we are in a position to address affordability issues effectively which I believe, will be essential to the reduction of the non-payment problem in Scotland.

b) Overall situation with bad debt

i) Bad debt in Scotland

Non-payment of water charges is a serious issue in Scotland. It materially affects the level of charges and needs to be addressed if bills are to be affordable for other customers. The water industry has much higher bad debt levels than in other utilities in Scotland.

The bad debt levels of the three authorities for the year 2000-01 are set out in Table 24.1:³

Table 24.1: Bad debts

	East	North	West	Scotland
Bad debts				
: Domestic	£7.7m	£2.0m	£16.5m	£26.2m
: Non-domestic	£9.1m	£0.9m	£5.7m	£15.7m
: Total	£16.8m	£2.9m	£22.2m	£41.9m
% of revenue				
: Domestic	6.0%	1.8%	9.4%	6.3%
: Non-domestic	10.2%	1.0%	4.4%	5.2%
: Total	7.7%	1.4%	7.3%	5.8%

There is apparently less of a problem with non-payment of water charges in the North of Scotland Water Authority. This is to some extent counter-intuitive because the issue of charges has had a much greater profile in the North and the level of the charge is much higher. There is also a greater number of smaller business customers, who are likely to have found it particularly difficult to adapt to a large increase.

¹ Transport and Environment Committee, 9th Report 2001

² Scottish Executive, *Affordability of Water and Sewerage Charges, Consultation Report*, February 2001

³ WIC Annual Return, 2000-01

Ultimately, non-payment of bills by some customers causes the bills of other customers to be higher. Table 24.2 outlines the impact of the bad debt problem on the average domestic paying customer.

Table 24.2: Impact of bad debt on average domestic customer

	North	East	West	Scotland
Average household bill 2000-01	£227	£192	£180	£194
Increase in average household bill that results from non-payment	£4	£11	£17	£12

The experience of other utility service providers in Scotland is also interesting. Scottish Power and Scottish Hydro Electric do not include bad debt in their Annual Report and Accounts. It has, however, been estimated that their bad debt is no more than 0.5% of turnover. This figure provides an interesting benchmark, as these companies are supplying the same customers as the Scottish water authorities.

ii) Comparison with England and Wales

My initial expectation was that there would be a strong correlation between non-payment and the level of the charge. In order to be able to compare collection rates in Scotland with those in England and Wales, it is useful to compare average domestic bills. I also show comparisons of non-domestic charges. Figures 24.1 – 24.4 show average bills, for domestic customers along with non-domestic customers and also small, medium and large businesses.

Figure 24.1: Comparison of average domestic water and sewerage bills for 2001-02⁴

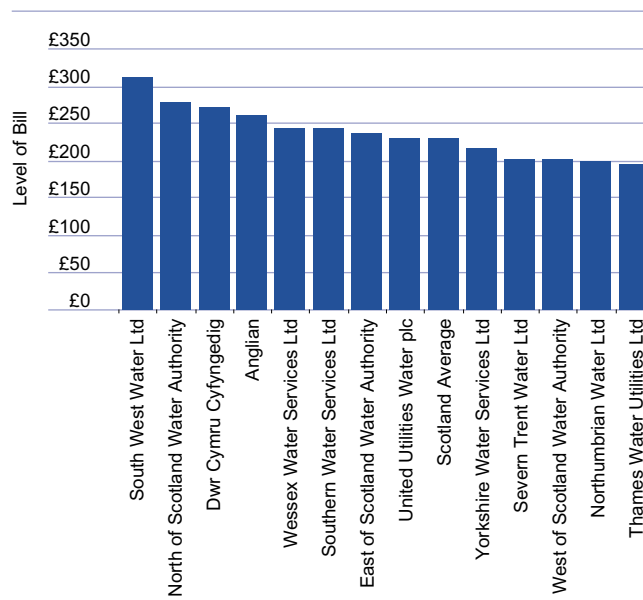
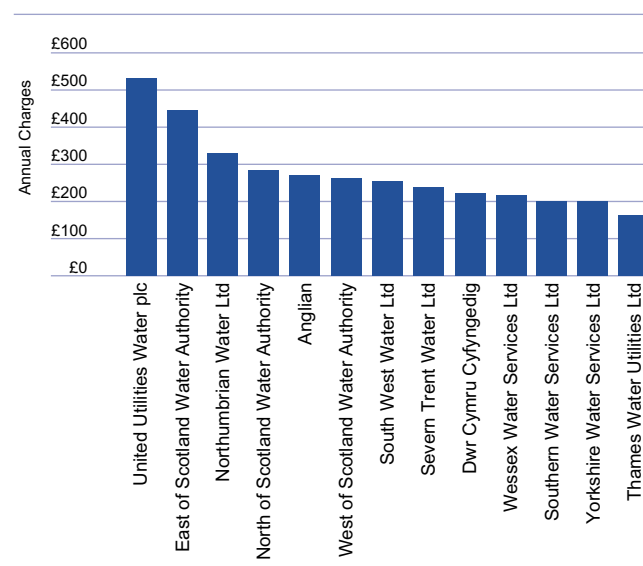


Figure 24.2: Comparison of combined water and sewerage bills – 2001-02 – for small business⁵



⁴ Parliamentary Question – (S1W-17140)

⁵ Small business - £1,000 rateable value, 15mm (1/2") supply pipe, 100m³ water used per year – all sewage is domestic strength – *Ofwat Tariff Structure and Charges 2000-01 report*. The position of East of Scotland Water Authority is misleading, because of their use of 'virtual' meters, see Chapter 13.

Figure 24.3: Comparison of combined water and sewerage bills – 2001-02 – for medium business⁶

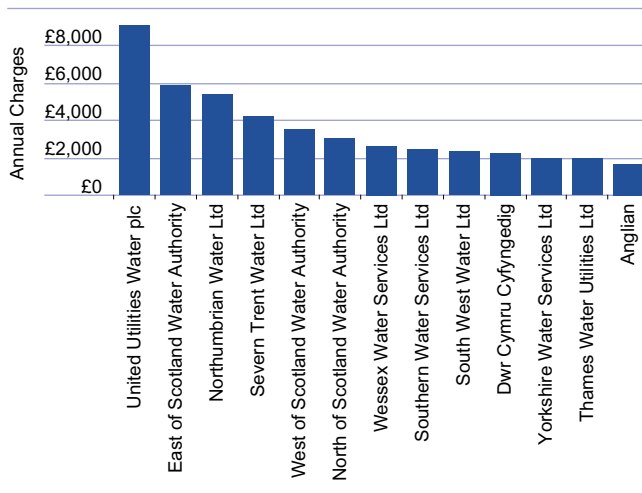


Figure 24.4: Comparison of combined water and sewerage bills – 2001-02 – for large business⁷

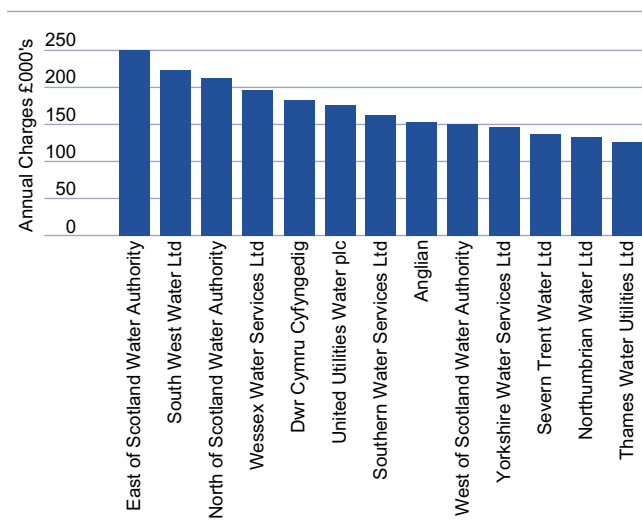


Table 24.3: English & Welsh water companies, bad debt levels – 1999–2000

	Total bad Debt	Turnover	Total bad debt as % of turnover	WIC estimate-domestic bad debt as % of turnover
Anglian Water	£8.7m	£752.4m	1.15%	0.77%
Welsh Water (Dwr Cymru)	£10.0m	£486.7m	2.05%	1.36%
North West Water	£26.1m	£1035.3m	2.52%	1.68%
Northumbrian Water	£3.8m	£490.9m	0.78%	0.52%
Severn Trent Water	£18.4m	£1011.0m	1.82%	1.21%
South West Water	£3.7m	£282.8m	1.30%	0.87%
Southern Water	£6.3m	£478.8m	1.32%	0.88%
Thames Water	£19.0m	£1135.2m	1.67%	1.11%
Wessex Water	£2.8m	£285.0m	0.98%	0.65%
Yorkshire Water	£6.1m	£642.9m	0.95%	0.63%

Until recently, charges have been lower in Scotland than in England and Wales. However charges in Scotland are now broadly similar to those south of the border.

The Scottish collection rate, however, does not compare favourably with the English and Welsh water companies. The English and Welsh companies' bad debt levels for the year 1999-2000 are outlined in Table 24.3. I have assumed a 2-1 rate between domestic and non-domestic bad debt⁸. This split is broadly the same as in Scotland.

There does not seem to be any strong correlation between the level of charges in England and Wales and the level of non-payment. The level of domestic charges for customers in South West Water, for example, is the highest, but the company's non-collection rate is quite low. The picture in Scotland is not dissimilar in that collection rates in the North are much better than in the West area, which has much the lower charge.

⁶ Medium business – commercial building, eg hotel £20,000 rateable value, 50mm (2") supply pipe, 1,000m³ water used per year – all sewage is domestic strength.

⁷ Large business – major manufacturer, £30,000 rateable value, 150mm (6") supply pipe, 200,000m³ water used per year 60,000m³ domestic strength sewage – 140,000m³ trade effluent discharged to sewer – *O'wat tariff Structure and Charges – 2000-01*. Most East of Scotland Water Authority large users have concluded a special non-tariff scheme agreement, which reduces their charges.

⁸ I have not included East of Scotland Water Authority as it has had significant billing problems. Its non-domestic collection performance will have been influenced by this poor quality of billing.

Table 24.4: The Scottish water authorities' current domestic bad debt levels

	Current domestic bad debt	Current % of turnover	Comparator – current % of turnover	Saving available	Impact on Band D customer bill
East of Scotland Water Authority	£7.7m	6.0%	0.52%	£7.0m	£11.93
North of Scotland Water Authority	£2.0m	1.8%	0.87%	£1.0m	£2.30
West of Scotland Water Authority	£16.5m	9.4%	0.52%	£15.6m	£19.89

However, even North of Scotland Water Authority does demonstrably worse in the proportion of domestic and non-domestic charges that it collects. If the Scottish authorities were to collect charges as well as their comparator companies, this would have a material impact on customer bills⁹.

However, there may be a number of other potential reasons for the high percentage of bad debt in Scotland compared with England and Wales:

- domestic water bills are collected by local authorities;
- domestic water bills are collected along with Council Tax;
- the quality of non-domestic billing is poor;
- fewer payment options are available;
- less assistance is available to those who have difficulty budgeting;
- historically, there has been no possibility of domestic disconnection, unlike in England and Wales.

Social factors can also have an influence although there is no evidence that social problems in Scotland are markedly worse than in other areas of the UK. This does not mean that assistance to vulnerable groups may not be required – it simply means that this is not the only answer.

c) Managing collection from the non-domestic sector

As outlined earlier in this chapter, there are a number of initiatives, which could improve collection from non-domestic customers. These would include better communication, better billing and collection, a generally more business-like approach and more cost reflective tariffs.

I have asked for information from the water authorities about how they manage revenue from the non-domestic sector. This was the principal subject of my WIC 1 and WIC 9 letters¹⁰. The WIC 1 letter asked the authorities to reconcile customer lists with audited revenue and to aggregate multi-site customers in order that the exposure to a single organisation could be analysed. WIC 9 asked about the levels of debt outstanding from the non-domestic sector. I have also been helped in understanding this issue through consultations with representative organisations and with my Large User Group.

I discussed the poor quality of billing in Chapter 22. Unquestionably this is not only frustrating for the customer in terms of the service provided, but it also has an adverse impact on the collection of revenue.

The fairness of charges and the need for cost reflective charges must also be addressed if the impact of competition on revenue for the incumbent authority is to be minimised. Improvements in these areas could also positively impact on the level of collection of charges.

The way the industry interacts with its non-domestic customers needs to improve. Several large customers have commented on the lack of responsiveness from their water authority. Requests go unanswered or are rejected without a clear explanation. This undoubtedly influences the level of non-payment. Yet it would be relatively easy to address. It is to be hoped that the initiatives taken by East of Scotland Water Authority in key account management will be effective and will serve as a model for the future of water services in Scotland.

It will be equally important, however, that the financial management of customers' accounts improves dramatically.

⁹ Comparators: Northumbrian and South West Water 1999-2000 data.

¹⁰ These can be found in Appendix F.

The average debt for East of Scotland Water Authority is over 120 days old and there are a number of major public and private sector customers who exceed even this. There is no reason why the performance of the East of Scotland Water Authority could not be improved dramatically. North of Scotland Water Authority, which is by no means a leader in UK terms, has limited the average time of an outstanding debt to one-third of the level in East of Scotland Water Authority.

I believe that my regulatory reporting will ensure that pressure is applied to the industry to improve its collection from the non-domestic sector. My suggestions of tariffs and on the conclusion of service level agreements should also help.

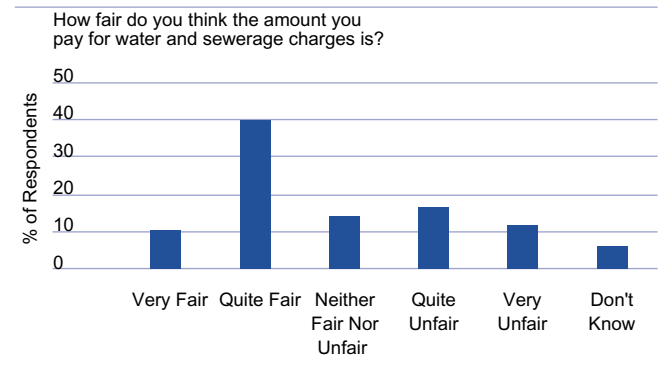
d) Managing collection from the domestic sector

Domestic customers are charged according to the Council Tax band of the property in which they live. This means that those living in more valuable properties will pay a higher charge for their water and sewerage services. In any water authority area, a customer occupying a Band A property will pay two-thirds of the charge paid by a customer living in a Band D property, with customers in Band H properties paying double the Band D charge. This means that a Band H property pays three times as much as a Band A.

Some households receive a discount in their charges. These discounts are for single person households, disabled customers or students. These discounts are not in any way related to ability to pay. For example, a millionaire living on his or her own receives the same 25% discount as a pensioner on income support. Nor does this discount reflect any difference in the economics of supply to that customer.

The property band reflects the assessed value of the house or flat. There is likely therefore to be a correlation between the income of the household and the band of the property in which they live. The linking of water charges to Council Tax bands should mean that those on lower incomes will pay less in water charges than those on higher incomes. This should improve the collection of charges.

Figure 24.5: Responses to question put to customers in Council Tax Bands A & B¹¹



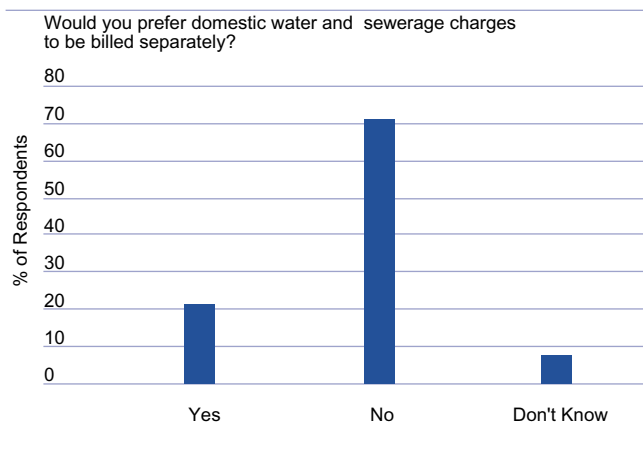
However, the recent significant increases in charges are likely to have had a disproportionate impact on lower income households, where water charges constitute a higher proportion of disposable income. This would be particularly the case for customers on low incomes who live in high-banded properties or for vulnerable customers in the North of Scotland Water Authority area, where charges are higher than elsewhere in Scotland.

For example, if a married couple receive only the average level of income support and live in a Band A home in the North of Scotland Water Authority, their water charge would represent just under 6% of their income.

There are a number of actions that may help to mitigate the problem of bad debt amongst domestic customers. There are radical solutions and there are several incremental actions, each of which may help a little. The views expressed to me in both public meetings and through my domestic Water Panel have been most useful in this area. There does not seem to be a strong consensus in favour of radical change. The majority of customers do not seem to believe that there should be a switch in either the mechanism or the method of billing. Given recent increases in the levels of charges, most customers (even those in lower banded properties) seem to think that charges are not unfair.

¹¹ The Water Panel (May 2001).

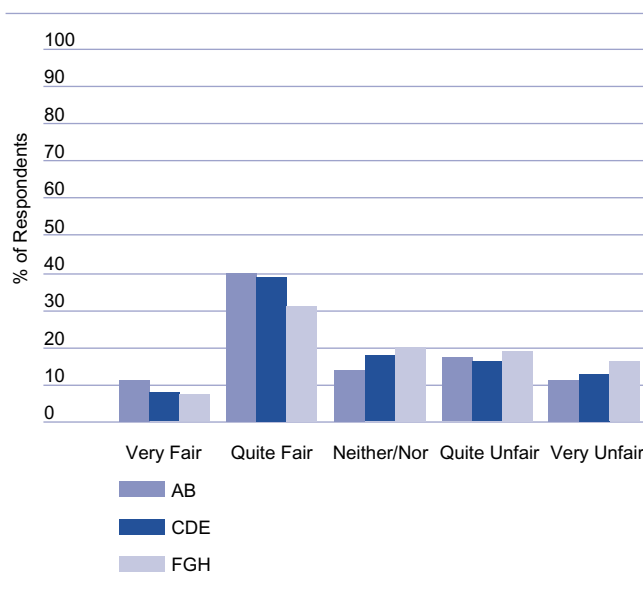
Figure 24.6: Responses to question put to customers in Council Tax Bands A & B¹³



There also does not appear to be any desire to see the water authorities bill domestic customers directly¹², as shown in Figure 24.6.

Figure 24.7 suggests that solutions to the bad debt problem are unlikely to result from changing the Council Tax link.¹⁴ Indeed a clear majority of customers prefer this method of billing.

Figure 24.7: Perceived fairness in relationship to Council Tax Band



Alternative approaches to billing domestic customers would all seem to enjoy less support than the link to Council Tax.

There are however some steps which could be taken to help improve collection rates from domestic customers. These are not all radical and would be relatively easy to implement. Such measures have been used to good effect in England and Wales. They include:

- increasing the number of payment options available,
- providing advice to those who are in debt,
- improving communication with customers.

I discussed the need for more flexibility in payment options and for more places to pay in Chapter 23. There was a significant minority of customers who believed that such options could well improve collection rates.

Some respondents felt that disconnection for non-payment should be introduced. However, while this may encourage some of those unwilling to pay to do so, this approach is unlikely to be effective in the long run. The sanction of disconnection was available to the water companies in England and Wales until 1999, but was rarely used. The costs in terms of customer relations were considered too high. This cost will only get higher as retail competition begins to have an impact on the market. Moreover, the removal of the sanction does not appear to have had an impact on collection rates in England and Wales.

There is evidence from the experience of the local authorities that working with Council Tax debtors on a variety of payment options, has been effective in improving rates of Council Tax collection rates. Initiatives in South Lanarkshire and in West Lothian appear to have had a marked effect on collection. There may be some benefit to the water authorities in supporting or assisting in similar initiatives.

There could certainly be some scope for the water authorities to work in partnership with the local authorities in providing a counselling service to those who are in debt.

¹² I addressed this issue in Chapters 13, 22 and 23. There would not seem to be any case based either on cost, revenue retention or level of customer service that would justify direct billing by the water authorities. There may be a case for the industry to enter into a contract with another organisation other than the local authorities, but this is an issue for management.

¹³ The Water Panel (May 2001).

¹⁴ The Water Panel (May 2001).

Figure 24.8: Responses to question put to customers in Council Tax Bands A & B¹⁵

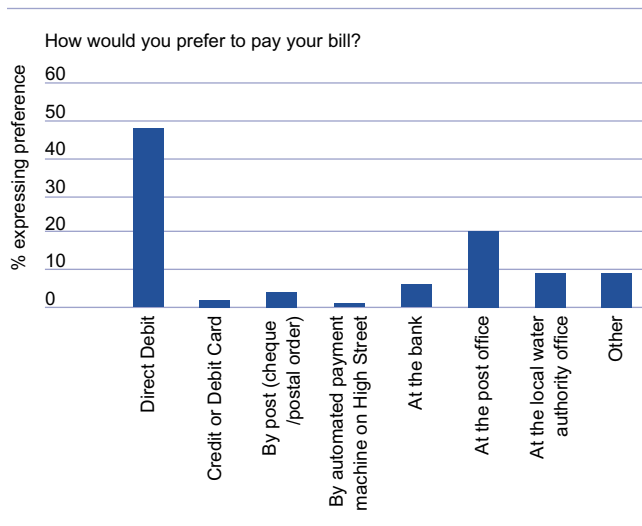
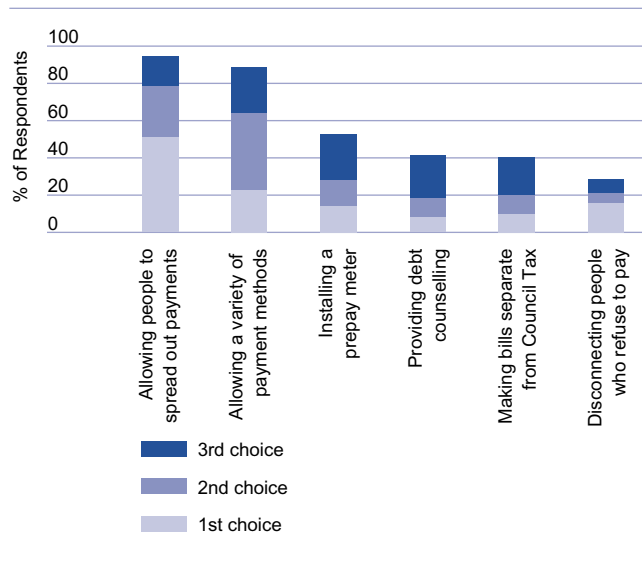


Figure 24.9: Most effective measures to encourage bill payment¹⁶



Many of the issues that customers raise with my office concern what they see as a lack of explanation or consideration from the water industry. These concerns range from letters that can be brusque or incomprehensible to more general complaints about a lack of courtesy and poor levels of service. There have been numerous cases, for example, when vital mains replacement work has begun and local residents were either not aware that the work was planned or were not aware of the

impact that it would have on the water quality they receive. Such failures in customer care do not cast the industry in a good light.

The industry has also been slow to explain to customers the need for water charges. Improving communication with customers could help to improve collection rates. Few customers understand either the amount of water that they use during a typical day or the costs incurred in delivering that clean water to the home and then removing the waste. If these costs were explained more clearly, customers would be more ready to pay their bill. This could also ease customers' fears about metering because once it is explained that the bulk of the cost relates to access, irrespective of use, so any economic case for metering for tariff purposes is reduced. My requirement on the industry to meet challenging efficiency targets should help.

One of the best adverts for any organisation is to be able to present itself as both caring and efficient.

e) Experience in England and Wales

As previously highlighted, collection of water charges is much more effective in England and Wales than it is in Scotland. There appear to be no particular reasons relating to income, geography or levels of charge that would explain this relative success. In many cases it may well be the result of better management of the customer base.

Most of the companies in England and Wales have introduced a range of measures to make bills easier to pay and more affordable to customers. Such measures include:

- more options on payment,
- more locations where bills can be paid,
- debt counselling,
- establishing trust funds.

All of the companies offer several options for how to pay the bill. These include choices as to frequency and method of payment. Wessex Water, for example, has arranged that the bill can be paid in any location displaying a paypoint sign. These include local convenience stores and newsagents. Another example is Severn Trent Water which offers their customers the option of a

¹⁵ The Water Panel (May 2001).

¹⁶ The Water Panel (May 2001).

Watercard, which enables the bill to be paid at any Post Office without incurring a handling charge.

After the introduction of the Water Industry Act 1999, Ministers gave clear guidance that the companies should help low-income customers manage their payments.

Debt counselling is also available from most companies in England and Wales. For example:

- North West Water will arrange appropriate budget schemes to suit the customer's individual requirements and offer free advice on the best way to budget for water payments.
- Northumbrian Water will also arrange appropriate budget schemes to suit the customer.

Other initiatives include the introduction of trust funds, which provide targeted assistance to customers who may have difficulty in paying their bill. Anglian Water, for example, set up the Anglian Water Trust Fund as an independent body, governed by a board of trustees. The fund is a registered charity that gives grants to customers in the Anglian Water area who are in financial hardship. It has been financed by donations from Anglian Water of around £2 million per year¹⁷.

The broad aims of the Anglian Water Trust Fund are:

- to administer grants to those experiencing hardship and poverty, in order to reduce water and sewerage debt amongst customers in the area;
- to help provide independent money advice services.

The trust fund gives grants towards two principal types of payment to address hardship:

- a payment to clear or reduce arrears of water or sewerage charges;
- a payment to meet other priority debts, to help purchase essential household items, or to help the customer manage their financial problems.

To be eligible for grants from the fund, people must be customers of Anglian Water or its subsidiary company, Hartlepool Water. Applicants submit a standard application form and evidence of income.

The Scottish Executive consulted on a potential role for trust funds in addressing the issue of affordability in Scotland. This option was decisively rejected by consultees. There are a number of issues:

- assistance is not automatic,
- payments are discretionary,
- administration costs.

This would suggest that the current transitional scheme implemented by the Scottish Executive is a more effective response.

f) Other utilities

The water industry is clearly not the only utility sector where non-payment and affordability for customers needs to be effectively managed. The electricity and gas industries also provide a vital service, which many on low incomes struggle to afford. Fuel poverty describes a situation where a household spends more than 10% of its income on fuel payments. This is seen as the maximum amount that low income households might reasonably be expected to spend on fuel. Some 4.5 million households in the UK are thought to fall into this category.

Energy companies have developed some innovative approaches to the issue of fuel poverty. Most companies have tariffs that are targeted at improving vulnerable customers' ability to pay. Two examples of such approaches are:

- Yorkshire Electricity's scheme, HEATplan, which offers regular fixed payments, free energy efficiency assessments, free insulation and energy efficiency appliances, and a free benefits check;
- Powergen and Age Concern have set up Age Concern Energy Services, which offers advice, a non-disconnection policy and free heating when temperatures drop below freezing.

g) The current transitional affordability scheme

There was understandable disquiet at the announcement of the significant increases in charges resulting from my interim Review. This was particularly so in the North of Scotland Water Authority area, where the increase had to be particularly steep.

¹⁷ *Anglian Water Trust Fund Annual Report 2000.*

Table 24.5: East of Scotland Water Authority – savings for customers on Council Tax benefit

Council Tax Band	Water	Waste water	Total	Reduction (threshold set at £180)	
				100% Council Tax benefit	50% Council Tax benefit
A	£83.00	£97.00	£180.00	n/a	n/a
B	£96.83	£113.17	£210.00	£30.00	£15.00
C	£110.67	£129.33	£240.00	£60.00	£30.00
D	£124.50	£145.50	£270.00	£90.00	£45.00
E	£152.17	£177.83	£330.00	£150.00	£75.00
F	£179.83	£210.17	£390.00	£150.00	£75.00
G	£207.50	£242.50	£450.00	£150.00	£75.00
H	£249.00	£291.00	£540.00	£150.00	£75.00

Table 24.6: North of Scotland Water Authority – savings for customers on Council Tax benefit

Council Tax Band	Water	Waste water	Total	Reduction (threshold set at £180)	
				100% Council Tax benefit	50% Council Tax benefit
A	£128.42	£105.03	£233.45	£53.45	£26.72
B	£149.82	£122.54	£272.36	£92.36	£46.18
C	£171.23	£140.04	£311.27	£131.27	£65.63
D	£192.63	£157.55	£350.18	£170.18	£85.08
E	£235.44	£192.56	£428.00	£248.00	£124.00
F	£278.24	£227.57	£505.81	£248.00	£124.00
G	£321.05	£262.58	£583.63	£248.00	£124.00
H	£385.26	£315.10	£700.36	£248.00	£124.00

From responses to the interim Review and the public meetings that we organised around Scotland, it became apparent that the affordability of charges for customers was an issue of major concern. Unfortunately, this was an issue that could not be handled by simply reducing the increase in charges. This would only have stored up even greater price increases for the future, threatened environmental compliance and led ultimately to even higher bills for customers.

The impact on those on lower incomes was, however, a particular area of concern. Sarah Boyack, MSP, then Minister

Table 24.7: West of Scotland Water Authority – savings for customers on Council Tax benefit

Council Tax Band	Water	Waste water	Total	Reduction (threshold set at £180)	
				100% Council Tax benefit	50% Council Tax benefit
A	£92.58	£85.02	£177.60	n/a	n/a
B	£108.01	£99.19	£207.20	£27.20	£13.60
C	£123.44	£113.36	£236.80	£56.80	£28.40
D	£138.87	£127.53	£266.40	£86.40	£43.20
E	£169.73	£155.87	£325.60	£145.60	£72.80
F	£200.59	£184.21	£384.80	£145.60	£72.80
G	£231.45	£212.55	£444.00	£145.60	£72.80
H	£277.74	£255.06	£532.80	£145.60	£72.80

for Transport and Environment, announced that the Scottish Executive would look at ways to help low income households to deal with the impact of higher water and sewerage charges. The Scottish Executive subsequently issued a consultation paper, *Affordability of Water and Sewerage Charges* in November 2000. This consultation invited views on a proposed transitional scheme to protect low income households from the impact of higher charges by introducing a charges ceiling for all customers receiving Council Tax benefit. One of the principal issues was the limited information available on the actual impact of charges.

In February 2001, Sam Galbraith MSP, then Minister for Environment, Sport and Culture, confirmed that the Transitional Water and Sewerage Charges Relief Scheme would take effect from the beginning of the financial year 2001-02. The scheme introduced a threshold set at £180 for the year 2001-02 (the threshold will be reviewed for each of the three years of the scheme). Households in receipt of Council Tax benefit with charges in excess of the threshold will receive a reduction on the charge in excess of the threshold in accordance with their entitlement to Council Tax benefit. This scheme is administered by local authorities, which identify eligible households and make automatic reductions in bills. The proposal is expected to cost £24 million over three years. This cost is met by the Scottish Executive.

The savings for customers on Council Tax benefit are outlined in Tables 24.5-24.7. For customers who receive partial Council

Tax benefit the same proportion of benefit is applied to water charges. For example if a Band D householder in East of Scotland Water Authority was receiving 50% Council Tax benefit, they will pay £225 $[(50\% \times £180) + (50\% \times £270)]$.

While the benefits of this scheme to someone in a higher band property may appear quite significant, the scheme only applies to those customers who receive Council Tax benefit. Some 54% of Council Tax benefit recipients occupy Band A properties and around 31% occupy Band B properties¹⁸. It must also be remembered that the £180 cap only applies up to and including Band E households. Households in higher bands only receive the value of the difference between the Band E charge and the capped rate of £180. The actual caps in East of Scotland Water Authority, for example, would be £240 for a Band F, £300 for a Band G and £390 for a Band A. This mirrors the Council Tax benefits system, which is also capped at Band E¹⁹.

i) Effectiveness of the current system

The current affordability scheme has had, without question, a significant effect on the water and sewerage charges paid by some of the most vulnerable customers in Scotland. In particular, it has helped those in the North of Scotland, where charges are higher. However, the current scheme does not specifically target the least well off. The current scheme is intended to be seen as transitional and was developed in order to assist lower income households subject to the highest increase in charges adjust, through time, to the new level of charges. This aim has been achieved, but the scheme does not provide support for what must be some of the lowest-income households. Nonetheless, it is reasonable to expect that collection rates should improve as a result of the introduction of this assistance.

h) Approach to affordability in England and Wales

The situation in England and Wales with regard to affordability is quite different from that in Scotland. There has been no strategic affordability initiative. Reductions in customers' water bills in England and Wales, which were made possible by the

marked improvements in efficiency of the water industry in England and Wales, are without doubt the main influence on the affordability of bills.

The Water Industry Act 1999 contained a number of measures to promote the Government's social policy objectives, such as:

- removing the right of a water company to disconnect water supply for domestic and other essential users; and
- allowing domestic customers to choose a metered or unmetered supply and to switch back to unmetered if they choose.

The Government has also issued regulations under the Act that are designed to protect certain vulnerable customers. These regulations apply where customers pay for their water on a measured basis, but require large amounts of water for essential purposes such as washing, cooking and cleaning. The regulations define a number of vulnerable groups who are to be given assistance with water and sewerage charges in such cases.

The categories of person are restricted, essentially applying only to those on benefit who either have three or more children or have a medical condition that requires extra water.

In addition to the regulations, the Secretary of State also sets out guidance to the Director General of Ofwat under the 1999 Act. One of the objectives of this guidance was "fairness and affordability", aiming to ensure that there is a "fair distribution of costs between customers, recognising the affordability of the service for different groups of customers as well as the costs of provision of the service". Charges schemes should, inter alia, "address the needs of all those on low incomes, for example through specially designed tariffs and payment options, in recognition of the particular problems such customers face".

The guidance also covered social tariffs. The aim was to encourage companies to develop innovative new tariffs to assist

¹⁸ Scottish Executive, *Affordability of Water and Sewerage Charges*, a consultation paper, November 2000.

¹⁹ When Council Tax was capped at this level, certain households were exempted, under a transitional scheme. Such households will receive a charges cap of £180 despite occupying a higher banded property. However these are very small in number.

customers who might have difficulty paying their bills. While they must not show undue preference or discrimination (as prohibited in the water companies' licences), tariff structures should be developed to help low-income customers.

Ofwat consulted on these issues prior to the approval of companies' Charges Schemes for 2001-02. Most respondents (and most of the water and sewerage companies) commented that it was not the role of companies to develop social tariffs. The companies suggested that any such tariffs should be developed by the Government and applied through regulations on a consistent England-wide basis.

Ofwat has shown a willingness to allow new social tariffs for metered customers. Approval typically requires the company to show that they are properly targeted (possibly by aligning them to receipt of benefits) and that they will have minimal impact on other customers' bills²⁰. Ofwat therefore approved the introduction of Anglian Water's Aquacare Plus tariff for vulnerable metered customers claiming benefit²¹. This tariff has a much lower volumetric rate than the standard tariff. Customers who can qualify for this tariff include those on income support or family credit. Customers may also be eligible if they require more water than usual as a result of a medical condition.

i) Improving payment in Scotland

There are a number of measures, discussed above that would help customers to pay their bills. These need to be implemented. However, there is also likely to be a need to remove the excuses for not paying water charges. The ratio of non-payers is so high in Scotland that there must be a number of households who are choosing not to pay their bill. It will be necessary to identify these people and to take appropriate action. Other customers cannot be expected to subsidise those who can afford to pay, but who, for whatever reason, choose not to pay.

This is an issue that requires further study and analysis. I have consulted extensively during my research for this Review with a group of organisations that are actively involved in advising and assisting the vulnerable on a day-to-day basis. I believe that

this group could play an important part in developing a plan to help improve the collection of water charges. I recommend that Scottish Ministers support further analysis of this very important question. Although this would take some time to complete, the benefits could be considerable. In the interim the existing transitional scheme should provide some support.

j) Conclusion

Non-collection of water charges is a major problem in Scotland. There seems to be no clear correlation between the level of the charge and the level of non-payment. In England, the companies have proven to be better at collecting charges. If the same could be achieved in Scotland, there would be less upward pressure on bills.

Non-payment by the non-domestic sector should be easier to address. Better billing quality and a better level of service should ensure that the levels of collection do improve markedly.

The more significant problem appears to be collection of charges from the domestic sector. There are a series of steps that the industry could take to improve collection and lessons could be learned from some of the successful recent local authority initiatives. A more customer-friendly approach would also no doubt play an important part in improving willingness to pay.

The current transitional affordability scheme does help by meeting its goal of providing assistance to those who were most affected by the large increases in 1999-2000. There is, however, a longer term need to address the issue of affordability. It will be essential to identify those who refuse to pay for their water and to hold them to account. In order to do this effectively, support must be provided to those who genuinely cannot afford the charge.

The problem of bad debt is costing customers in Scotland dearly and needs to be addressed. I believe that further study could reveal solutions that are both effective in providing support to those in need and help reduce the problem of bad debt. I recommend that Scottish Ministers support this further work.

²⁰ MD165, *Approval of Companies' Charges Schemes in 2000-01*.

²¹ Ofwat, *Tariff Structure and Charges 2001-02 Report*, p.14.

Section 5: Chapter 25

Customers: Relief to Charities

In the previous chapter, I highlighted the issue of significant increases in charges and the impact on certain groups of customers. While that chapter dealt with the issues relating to those on low incomes, another group of customers – charities – has voiced concern about the effect of charges increases on them. Charities have expressed the view that they are receiving “a double blow”; not only do they face the increase in charges, but also the relief of water and waste water charges, which they have enjoyed for a number of years, is to be withdrawn. The impending withdrawal of reliefs to charities has proved a particularly contentious issue, worthy of examination. Relief of charges has historically been funded through higher charges to other customers, including low-income households.

a) What is a charity?

The precise definition of a charity within the water industry is not altogether clear. A number of organisations have been categorised as charities :

- churches,
- village halls,
- sports clubs,
- nursing homes,
- charity shops,
- youth clubs, etc.

The number and category of charities differs significantly between the three water authorities. There would also appear to be differences in the application of reliefs within each of the authorities.

b) Background

The history of relief of water and waste water charges has had many twists and turns. It has also excited considerable political and media interest. On 1 April 1996, the three water authorities inherited a wide range of practices in the application of charges to customers within their area. This inherited position conflicted with the Local Government etc (Scotland) Act 1994, which abolished the statutory basis for reliefs and required the authorities to show “no undue preference” or “undue discrimination” in the charges they levied on customers.

On 1 April 1997, West of Scotland Water Authority stopped granting reliefs to new charitable concerns that would have been eligible under the previous rules. It adopted a similar policy with regard to existing recipients of relief who moved address. These organisations were disqualified from receiving relief on the new property. North and East of Scotland Water Authorities followed the lead of the West of Scotland Water Authority, but only from 1 April 1999.

On 1 April 1999 the authorities also took the first step to phase out reliefs for some organisations such as charity shops and related offices. The phased withdrawal was to take place over a five-year period¹. The assessed impact would result in higher bills for some 5,000 properties across Scotland and the average increase in charges was expected to be under £100 per year. Reliefs were also to be phased out over a period of five years commencing 1 April 2000 for other charitable bodies such as church halls, residential care homes and nursing homes.

In September 1999 the then Transport and Environment Minister, Sarah Boyack MSP, after talks with the Scottish Council for Voluntary Organisations (SCVO), announced that all charities were to be given one year’s grace to allow them to plan their budgets in preparation for the imminent increase in charges. The Minister also announced that relief to organisations such as churches, nursing homes, sports and youth clubs would not be withdrawn until further consultation had been carried out. All other organisations would have reliefs phased out over a period of five years commencing 1 April 2000.

In line with the statement to Parliament made by the Minister, the three water authorities consulted with the churches, nursing homes and various voluntary organisations² affected. This led to a decision to proceed with the phasing out of reliefs in February 2001. Subsequently in May 2001, the new Minister for Environment and Rural Development Ross Finnie MSP announced that the withdrawal of reliefs due to start in April 2001, would be deferred until April 2002. The implication of this was that charities would continue to receive full relief in the 2001-02 financial year, but in 2002-03 they would lose 40%. The remainder would be withdrawn over the following three years (20% each year) ending in 2005-06.

¹ Scottish Executive Press Release SEO635/99 16 September 1999

² Scottish Executive Press Release SEO 1285/2001 17 May 2001

The water authorities' estimate the total cost of reliefs for the period 2001-02 to be £11.2 million, of which 50% is allocated to nursing and care homes with the remainder for charity shops, churches, universities, private education establishments and others.

Throughout this period, there has been much political debate and discussion on this issue and strong lobbying from various stakeholders. There has also been extensive media coverage over the past 18 months, highlighting the concerns about relief withdrawal.

c) Situation in England and Wales

Unfortunately, I cannot draw upon any lessons learned from a review of practice in the English and Welsh water industry. This is simply because reliefs were not inherited by the privatised water companies from their authority predecessors. Indeed, historically, local authorities do not appear to have provided reliefs, and if they did it was rare, and on a purely discretionary basis, rather than as a matter of social policy.

d) Developments in Scotland

i) Consultation process

The consultation process required by the Minister before the withdrawal of reliefs from voluntary organisation began in June 2000. The water authorities consulted with 11,000 customers still in receipt of full relief. These organisations were mainly:

- Churches and church halls,
- Residential care homes (public and private),
- Sports and youth clubs (public and private).

The three authorities collaborated and issued a standard questionnaire. The response rate to the questionnaire was 39%. Responses revealed that³:

- 61.0% were registered charities;
- 89.0% considered themselves non-profit making;
- 86.3% do not receive relief from any other utility charge;
- 51.9% would consider installing a meter if it was a way of reducing charges;

- 70.1% were aware of current water service charges;
- 82.2% were aware that other customers fund reliefs through higher charges;
- 55.7% believed it appropriate to pass reliefs on to other customers as higher charges.

A number of consultees complained that some of the questions were not entirely objective. My review of the questionnaire confirmed some of these complaints. Questions that asked about their level of understanding that reliefs were funded by other customers were not objective and could have been interpreted as being 'loaded'.

ii) Scottish Charity Law Review Commission

Historically the Inland Revenue has assessed the eligibility of an organisation for charity tax benefits and it is this assessment that determines whether or not an organisation can call itself a charity. In March 2000 the Deputy First Minister, Jim Wallace MSP set up The Scottish Charity Law Review Commission to review and reform charity law in Scotland.

The Commission is composed of representatives of the legal profession, accountants, local government and the charity and voluntary sectors and is chaired by Jean McFadden. The Commission first met in April 2000. Its remit was "To review the law relating to charities in Scotland and to make recommendations on any reforms considered necessary".

On 17 July 2000, the Commission published its consultation paper, *Your Views Matter*. The consultation process comprised three strands:

- a detailed report that was sent out to 150 umbrella organisations in Scotland and the United Kingdom;
- a consultation questionnaire that was issued to 18,000 voluntary organisations in Scotland;
- the Commission held six forums throughout Scotland and convened a series of meetings with key organisations.

Both the detailed report and the questionnaire were made available on the Commission's web site. The consultation period ended on 29 September 2000; 51 responses were submitted from umbrella organisations to the main report and

³ NOSWA Charitable Reliefs – FD0712J04

935 responses to the questionnaire. Umbrella organisations also consulted extensively with their members and client groups.

In May 2001 the Commission published its review of Scottish charity law. A number of recommendations were made.

The Commission recommended that a Scottish charity should meet certain criteria:

- for the public benefit/in its overriding purpose,
- non-profit distributing,
- independent,
- non-party political.

The main recommendation regarding relief from water charges was that “Scottish charities should receive mandatory 80% relief from water and sewerage charges”. The Commission reported that respondents had argued that withdrawal of relief to charities would inevitably lead to higher costs and would impact in particular on low water users. The Commission expressed the view that if Scottish charities were to continue to receive mandatory relief from non-domestic rates, they should receive similar levels of relief from water and sewerage charges, whether the water supply was metered or unmetered.

The Scottish Executive is currently consulting on the recommendations of the Commission.

iii) Transport and Environment Committee

The Transport and Environment Committee conducted an inquiry into the water industry between December 2000 and March 2001. Its decision to undertake this inquiry was influenced by its recognition of the unprecedented challenges facing the water industry.

The Committee took evidence from a number of organisations that oppose the action to end the practice of giving relief. The Committee considered that the fact that these reliefs have been given for many years meant that they were an established practice and tradition. This was believed to make a convincing case for their retention⁴.

The Committee recommended that a new, more targeted, relief scheme for voluntary organisations and charities should be established. However, the Committee did not believe that all voluntary organisations and charities should be eligible. The Committee also recommended that a provision to introduce a new scheme should be included in the forthcoming Water Services Bill. Such a scheme should not, however, be implemented until a wide-ranging consultation had taken place.

e) Response of my office

I understand the concerns that have been raised about the future of relief from charges for charities. However, I have a statutory duty to promote the interests of all customers of the water authorities and, therefore, must always seek to achieve a balance in this role.

I do not believe that I have a mandate to comment on the appropriateness of charitable reliefs in general or on whether any particular customer should benefit. My view is informed by my consultation with customers on whether customers of the water authorities should be the ones to fund these reliefs.

In my advice on charges, I have a duty to show no undue preference or discrimination. I believe that the broad aim of charging should be to eliminate cross-subsidy between broader customer groups.

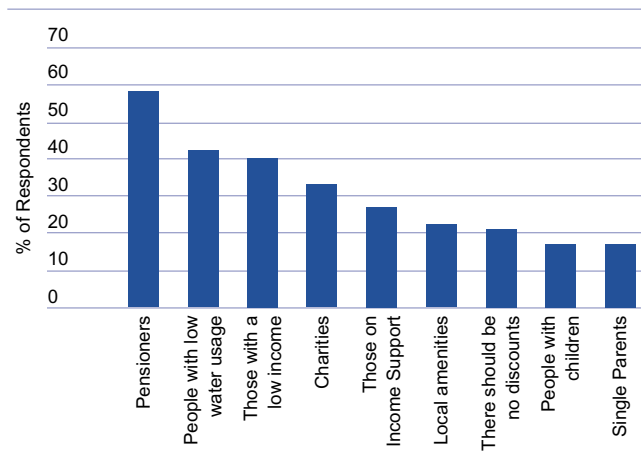
Intentional cross subsidy, such as that provided by relief of charges, is a matter of social policy and outside the remit of the water authorities and their regulator.

I have had a number of meetings with representative bodies of charities, such as the Scottish Council for Voluntary Organisations and the Churches Commission to establish their concerns.

My office has also consulted extensively with both household and business customers to establish their views on this delicate issue. Figure 25.1 shows responses to a question put to my Water Panel of domestic customers.

⁴ Transport & Environment Committee 9th Report 2001 SP Paper 362

Figure 25.1: Responses to the question: “Would you be willing to pay higher charges so that discounts can be given to any of the following groups?” The results of this are given below.⁵



There was much more support for pensioners and low income households to receive discounted water supplies than there was for charities.

Those most likely to support discounts to charities are:

- people aged 16-34 (40%);
- those in Council Tax Band C, D or E (38%);
- those on higher incomes (46% of those on salaries of between £30,000 and £40,000 – 51% of those on salaries between £40,000 and £50,000, and falling back to 35% of those on salaries of more than £50,000).

Those earning between £5,000 and £10,000 give the lowest support to paying higher charges to allow discounts to be offered to charities.

The question must be asked whether it is appropriate that all customers, especially those considered most vulnerable (see Chapter 24) should be required to make a contribution, involuntarily, to charities within their water charges.

One of my other concerns is to ensure that nothing is done that could adversely impact on customers over the medium to long

term. In the likely future competitive environment, reliefs will either need to be given a statutory basis and any new entrant required to offer the agreed relief. Alternatively there will be a smaller customer base remaining with the public sector, which, as a result, would face the costs of providing this relief.

Service providers in other utility sectors, i.e. gas, electricity and telecommunications, do not offer discounts/reliefs to charitable groups. Indeed, they are often prohibited in their licences from cross-subsidy between groups of customers. Charges for customer groups are generally made on a cost-reflective basis.

f) Options available

From a customer's perspective, it is important that the management of Scottish Water- if it is approved by Parliament - has to be focused on reducing costs and providing value to customers. The issue of reliefs has the potential to distract management from this key task.

I do not believe that the costs of providing relief should be met by water customers. There are three principal reasons for this:

- There is very limited customer support for reliefs - especially from the low paid. Only in the subset of my panel that earns £40-50,000 per year was there a majority in favour of relief.
- It is critical that the public sector water service provider is not disadvantaged in the competitive market and the provision of reliefs will increase the costs of the incumbent.
- The issue of affordability of water charges seems to be a very real one for some customers, based on the information outlined in Chapter 24. It is not appropriate that those who are struggling to pay (who, in many cases, are those to whom charities are looking to provide a service), should pay more than is absolutely necessary for their water service.

There may well be a strong case for reliefs and I recognise and respect the views of the Transport and Environment Committee and the Scottish Charity Law Commission.

It is ultimately for the Scottish Parliament and the Scottish Executive to take a decision on the issue of reliefs. It should not be a matter for the water authority or their regulator, because relief, if it is to be given, should not be funded by customers' charges.

⁵ The Water Panel (May 2001)

Section 6

Governance Issues

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Section 6: Chapter 26

Governance: Corporate Governance and Incentives

a) Challenging times ahead for Scottish Water

Scottish Ministers are committed to keeping the Scottish water industry in the public sector. The industry is, however, entering challenging times with investment to deliver, efficiency targets to achieve and the proposed integration of the three authorities.

To meet these challenges will require the framework of corporate governance to be strengthened. A stronger governance framework will provide significant reassurance to customers that the existing authorities or the proposed Scottish Water are genuinely accountable. Such high standards of corporate governance can only be delivered by an experienced, commercially orientated board and by high-quality senior management.

It will also be necessary to review and adapt the available incentives, to ensure that management actively pursues the customer interest. The focus must always be on delivering value for money to all customers in Scotland. This means providing excellent customer service at the lowest sustainable cost. Customers want to be confident that the service provided by the Scottish water industry bears comparison with the very best water and sewerage providers, nationally and internationally.

The highest standards of corporate governance will be part of this, as the framework will underpin efforts to deliver value for money to customers. The consequences to customers of not meeting the efficiency targets are significant. The increase in customers' bills would be in excess of £150 per average household.

Moreover, as I discussed in Chapter 11, competition will be a threat only if the service provider does not address the significant efficiency gap that exists between Scotland and other suppliers in England and Wales. Inefficiency will encourage competitive new entry and will lead to pressure on revenue (particularly from the non-domestic sector), which is wholly avoidable. In the public sector model, the customer will have to look primarily to the board to challenge management and ensure that there is a focus on providing long-term value to customers. It is for the board to develop the strategy of the organisation and to determine how best to deliver services to customers. As regulator, my role is simply to set high-level

targets in the customer interest and to monitor achievement of these targets.

Following a brief look at how Scottish Ministers have voiced their commitment to the public sector, I will examine what is meant by 'public' and 'private' sector. I then highlight the lessons that can be learned from best practice in the water sector in England and Wales.

b) Commitment to public sector

Most commentary about the Scottish water industry relates to whether or not the industry should be privatised. I believe that Scottish Ministers are committed to keeping the Scottish water industry in the public sector. Since the establishment of the Scottish Parliament, Scottish Ministers have confirmed this intention on a number of occasions.

At the Water Forum, held in November 2000 at BP Amoco, Grangemouth, Sam Galbraith, then Minister for Environment, stated this promise clearly to over 100 of the largest water and sewerage business customers in Scotland. He confirmed this again when he appeared before the Transport and Environment Committee in February 2001. He said 'The (Water Services) Bill will be based on . . . our continuing commitment to retaining the water industry in the public sector. So that there can be no doubt, let me repeat that: one of the pillars of the bill will be our continuing commitment to retaining the industry in the public sector'.

There have also been numerous Parliamentary Questions about the possible privatisation of the industry. Recently Mr John Farquhar Munro (Ross, Skye and Inverness West) (LD) asked the Scottish Executive "whether it will give an assurance that the creation of a single water authority will not lead to the privatisation of the water industry." The Minister for the Environment and Rural Development, Ross Finnie, MSP, replied "Yes"¹.

c) The 'public sector' water industry

The Scottish Executive has overall responsibility for policy issues in water and the environment on behalf of the Scottish Parliament. This includes the setting and administration of standards. The Scottish Executive also has responsibility for

¹ (S1W-16477)

proposing to Parliament the public spending that is to be made available to the industry. My office is one of three regulators. My focus is on customer and economic issues. The Scottish Environment Protection Agency and the Water Quality Section of the Scottish Executive's Water Services Unit are responsible respectively for environmental and water quality issues.

One of my principal functions is to advise Scottish Ministers on the revenue needs of the industry. A major element of this advice is my view on the efficiency levels of the water authorities that are responsible for delivering the service.

The water authorities, as economic entities, are classified as 'public corporations of a trading nature'. The three Scottish water authorities are public bodies answerable to the Scottish Parliament. They are created by statute to fulfil a specific function - the provision of water and sewerage services. The authorities are not owned by the Parliament, the Scottish Executive or customers. However, Scottish Ministers do have a power of direction and, while this is not ownership in the sense of the Companies Act or tax law, this power allows Ministers, de facto, to perform the public ownership/shareholder function on behalf of the Parliament. If the Scottish Parliament approves the formation of the proposed Scottish Water, the legal status of the new entity will be the same. This would suggest that customer interests may require Ministers to lay down some very clear ground-rules on financial and management accountability.

Each of the current authorities comprises 12 members. The members are the authority, but are often referred to as the 'Board'. The authority members, including their Chairman, but excluding their Chief Executive, are appointed by Scottish Ministers, following the Guidance issued by the Commissioner for Public Appointments. The other members of the authority appoint the Chief Executive, with the Minister's approval. Following the 1997 Scottish Water Industry Review by the new Labour Government, the Secretary of State for Scotland appointed 16 local councillors to be members of the authorities². The remaining members come from a variety of backgrounds, including engineering, education, utilities, business and finance.

In order to understand the commercial implications of this governance structure, it is probably best to compare the

organisational structure with the private companies, with whom the industry in Scotland will have to compete. At a superficial level, the organisational structure of a Scottish public sector water authority is not too dissimilar from most privately owned water and sewerage companies in England and Wales. Both models have a board of directors and senior management. However, there are marked differences in the roles and responsibilities of the boards within the two models.

d) Roles and responsibilities

i) Structure

The Local Government etc. (Scotland) Act, 1994, which established the three authorities, defined their broad responsibilities. The authorities are the owners of the assets and are responsible for the delivery of the service to customers. The authority members are responsible for meeting these statutory duties. Scottish Ministers have a power of direction over the authorities and this allows them, de facto, to exercise functions similar to that of the owner of a company. The roles of the authority members and management of the three Scottish water authorities were set out by the Secretary of State for Scotland in 1997 in the 'Management and Financial Memoranda'³.

Figure 26.1 shows the structure of the Scottish water industry and the relationship between the Scottish Parliament, the members of the authorities and the management.

The de facto ownership responsibilities are delegated through the Scottish Parliament to the Scottish Executive's Environment and Rural Affairs Department (SEERAD). On a day-to-day basis the civil servants of the Water Services Unit, part of SEERAD, implement the policy of Scottish Ministers.

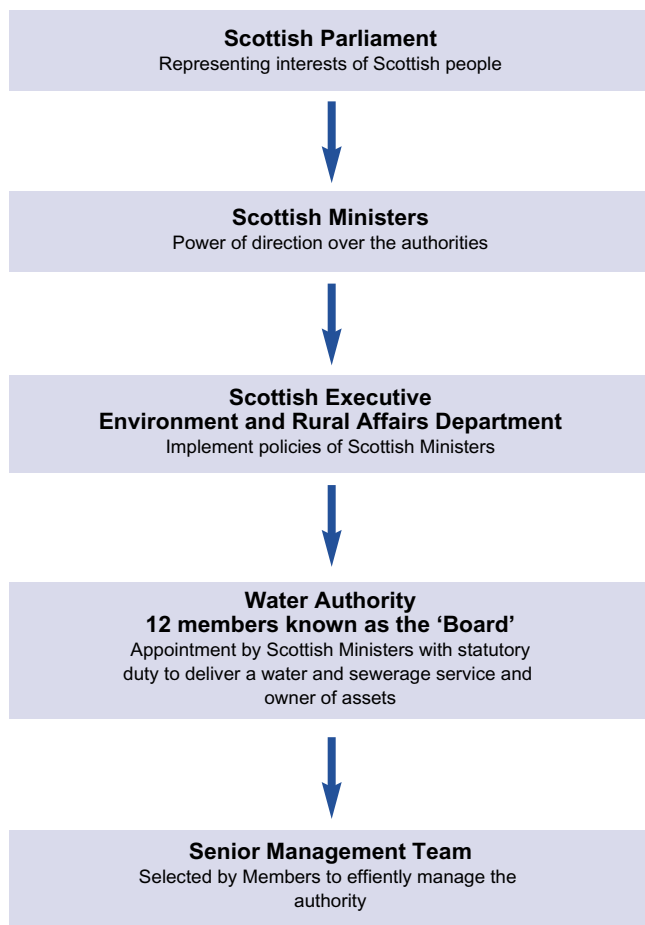
The Secretary of State for Scotland had a number of powers, which were transferred to Scottish Ministers on 1 July 1999, on the establishment of the Scottish Parliament. These included:

- appointment and removal of board members;
- decisions on members' remuneration;
- approval of the authority members' selection of a Chief Executive;
- approval of staff terms and conditions.

² The Scottish Office: Scottish Water Industry Review Outcome 1997 and oral statement by Secretary of State for Scotland in House of Commons, Tuesday 16 December 1997.

³ Management and Financial Memoranda Secretary of State, January 1997.

Figure 26.1: Structure of the Scottish Water Industry



The role of Scottish Ministers also includes establishing the broad financial regime within which the authorities operate, and the appointment of auditors.

The role of the Water Services Unit is to ensure that the authorities observe the provisions of the Management and Financial Memoranda and that they operate in a way “consistent with the requirements of a public body”. According to the Memoranda, the Unit’s responsibilities are:

- to advise Ministers on the priorities to be applied to the authorities’ activities in the light of Government policy;
- to represent the interests of the authorities within Government and EU institutions;
- to guide the authorities on the application of Government policy;
- to monitor the performance of the authorities;

- to account for the payment of voted provision to the authorities and for control over the non-voted public expenditure of the authorities;
- to advise the authorities when asked.

The Memoranda establish that the Chairman is the principal point of contact between Scottish Ministers and the members. His main role is:

- to give strategic direction to the work of the authority;
- to establish the ethos of the authority;
- to represent the authority to the media and the public.

He is also expected to ensure that the authority develops and acts upon policies to fulfil its statutory duties. In particular, the Chairman should be satisfied that the Chief Executive has in place proper controls and procedures to secure the proper use of public funds and value for money to customers.

According to the Memoranda, the members should “bring their independent judgement to bear on issues of strategy, resources and standards of conduct”. In particular, members are responsible for:⁴

- agreeing the broad strategy of the authority in a manner consistent with the statutory obligations placed on the authority and any guidance or directions given by Scottish Ministers;
- ensuring that the requirements of propriety, regularity and value for money are met;
- developing a statement of what matters are reserved for decision by members and what matters staff may undertake on their own authority;
- agreeing the Annual Corporate Plan;
- agreeing the procedures of the authority;
- identifying and setting measurable performance indicators against which the effectiveness of the authority in achieving their goals can be measured;
- monitoring the authority’s performance against performance indicators;
- appointing the Chief Executive (after the first) and seeking Scottish Ministers’ approval;
- assisting the Chief Executive in the appointment of senior managers;
- ensuring that the authority and employees follow the Memoranda.

⁴ Management and Financial Memoranda Secretary of State, January 1997

There are two principal committees of members: Audit and Remuneration.

The Chief Executive is accountable for the efficient management of the authority. In particular he is responsible for ensuring:

- that the accounts are properly presented;
- that there is a high standard of financial management in the authority;
- that its management systems and procedures, including financial monitoring and control systems, are appropriate for the achievement of the authority's objectives;
- the promotion of efficient and economical conduct of business and that financial propriety and regularity are safeguarded;
- appropriate contact with business and finance communities is maintained;
- that the public are informed about the authority's policies and activities.

The management teams typically meet once a week to monitor and guide the authorities' performance.

ii) Accountability

The key feature of any governance system is not simply the roles and responsibilities of the various actors. It is the method and effectiveness of their accountability. I now therefore move to consider the accountability that exists within the existing system.

The first level of accountability - that of authority members - is the most difficult to define. They are principally responsible for the delivery of the statutory obligations of the authority, as defined by the 1994 Local Government, etc. (Scotland) Act. Ultimately, there is an unstated accountability of the authority to the Scottish Parliament. If events and performance are not satisfactory in the eyes of Parliament, there are two ways in which this accountability can be made effective: either by legislative change or by Parliament requesting Ministers to issue a direction to the authority.

Authority members can therefore be called to attend Scottish Parliament Committee meetings. Most recently, the three Chairmen appeared before the Transport and Environment Committee Water Inquiry.

The most direct accountability is that which results from the agreed Management and Financial Memoranda. These establish the delegated limits of authority to the members and the sort of decision upon which they should consult Scottish Ministers before taking action. The performance of each authority can be measured against performance indicators, agreed as a result of the Memoranda, to assess how successfully it is achieving its aims and objectives. The main performance indicators cover compliance with quality standards in delivery of services, customer services standards, financial targets and controls, and targets for managerial and organisational efficiency. Accountability for performance is through annual meetings that are held between members and the Minister for Environment and Rural Development and Water Services Unit officials.

In practice, however, there is considerable contact between the management of the authority and officials within the Water Services Unit of the Scottish Executive. While this has undoubtedly resulted in better and more timely information being made available to the Scottish Executive, it has meant that the lines of accountability for the management are less clear than is perhaps desirable. In effect, managers have dual accountability – directly to the de facto owner and to the members.

There would also appear to be a greater emphasis placed on accountability at a local level than on accountability between de facto owner, members and management. Each of the three authorities holds meetings in public throughout their area of operation. This is an opportunity for members of the public to listen to the business of the meeting and to ask questions. These meetings are held approximately every eight weeks. Attendance at meetings by the public is usually not high. If a customer were not happy with the discussions of the members, he would have recourse only to his MSP, the Scottish Executive or, in the event that it were a customer service issue, to me as regulator.

An authority's members are in place according to a letter of appointment. Scottish Ministers can withdraw this letter of appointment in the event that a member was in breach of their obligations. The salary paid to members ranges from £6,000 to £7,000 per annum. The Chairmen have annual salaries of between £25 and 28,000⁵.

According to the authorities' Annual Reports, the boards meet regularly to discuss financial, strategic, budgetary and

⁵ Annual Report and Accounts 1999-2000

organisational issues. They also receive reports from senior management on risk management, internal audit, and on quality, environmental, regulatory and Health and Safety issues. Members are able to question the senior management on any issue within their area of responsibility. The boards meet in public and private. Whilst an examination of the papers submitted to members at the public meetings shows that a range of issues are presented for discussion, the information contained in the papers and the record of the discussion as noted in the minutes would not suggest that in-depth scrutiny of any particular issues is conducted by the members. Each authority reports on its internal and financial control systems in its annual report and accounts. However, little financial information seems to be presented to the members and my experience suggests that the quality of forecasting of costs and revenues is not good.

iii) Issues to be addressed in the customer interest

There are four aspects of the existing method of accountability, which, from a customer value-for-money perspective, ought to be addressed. These are the time that is available to members; the profile and experience of the members; their level of remuneration, and their relationship with the Scottish Executive.

The Chairman of the authority is contracted to spend on average 1.5 days per week working on water authority business. Each of the other non-executive members are contracted to spend on average 2-3 days per month. This means that the authority is able to muster just over one full man month per month of operation of the authority. In practice, it is common for the Chairmen and members to spend more time on authority work than their contracted hours. Even taking this into account, the limited time available inevitably limits their ability to hold management fully to account, especially given the background of members.

This is especially relevant as members of the authority will increasingly have to deal with complex business issues. These include the pursuit of efficiency targets, the potential for competition, the opportunities for new business, and improving and differentiating the service provided to customers. These issues are likely to be better managed by members with significant relevant experience. This could come from roles in business management or expertise in, for example, human resources or finance. The operating environment of the

authorities has evolved substantially in the past year or so and it will be important for the role of members to reflect these developments.

This is not a criticism of current practice or of current members, but is directed at avoiding future problems in maintaining the competitiveness of the public sector model. It is, therefore, important from a customer perspective that the members of the authorities or of the proposed Scottish Water are chosen to reflect the new roles and responsibilities that they have. Ultimately, value for money for customers depends at least as much on the members as it does upon me as regulator.

If members are not properly remunerated and do not have a sufficiently well defined role, then it will be difficult to attract the expertise that is required. This issue will be important to address, especially if the proposed Scottish Water is approved by the Scottish Parliament.

Clarity in the role of the members is at least as important as their remuneration. The role of owner should be about setting targets and expecting outputs. The owner should then hold members to account for the achievement of the agreed goals. If the existing authorities or the proposed Scottish Water are to be successful and sustainable (both of which are fundamental to customers' interests), it will be essential that the Scottish Executive sets very clear and measurable outputs for the authority and then holds them to account for their achievement. This will strengthen the hand of members, both in their function of scrutineer of management and in their function of advisor to management.

Salaries for the most senior management are lower than equivalent posts in the private sector. However, the remuneration levels below the most senior posts compare quite favourably. The recent announcement by Ross Finnie, MSP, of the prospective terms of appointment of the new Chair and Chief Executive of Scottish Water indicate a recognition of the challenges that lie ahead. The availability of a significant bonus for achievement, (provided it is available only for achievement), is in customers' interests. I believe that this has established sufficient incentive for managers to perform and to achieve the current efficiency targets. This, however, will also require proper scrutiny by experienced members.

Executive directors should be incentivised to meet customer service, environmental and public health outputs within the revenue cap. The efficiency targets, assumed contribution from new business and the proceeds of property disposals are a means to an end, not an end in themselves. It is not in the customer interest that management be judged against the means to an end rather than the achievement of the agreed levels of service for customers.

e) Corporate governance in a 'private sector' water company

i) Structure

The regulatory structure in England and Wales is essentially the same as in Scotland. There are three regulators covering water quality (The Drinking Water Inspectorate), the environment (The Environment Agency) and the economic regulator (Ofwat). Policy issues are managed by Department for Environment, Food and Rural Affairs (DEFRA) and Department of Trade and Industry (DTI). The two principal differences in the system is that the service is provided by private companies which have a license to provide services to customers, and that the economic regulator has the power to determine and not advise on revenue levels.

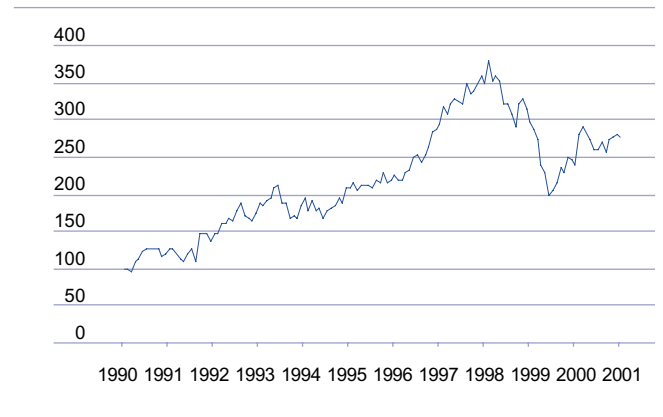
I have opted to use Thames Water plc (Thames) to illustrate the main features of the corporate governance within the private water sector. Although Thames is now a subsidiary of RWE, It is useful to compare its former governance structure with that in the public sector.

According to the 1999-2000 Annual Report and Accounts, Thames Water had over 193,000 shareholders, 183,891 of whom were individuals. Most of these shareholdings were small, but four shareholders accounted for nearly 20% of the total company. All of these shareholders (from the largest to the smallest) invest in the company in order to receive dividends and capital growth. The return to a shareholder is equal to the capital growth plus the value of the dividend. The return to a shareholder is maximised if the company exceeds the profit expectations of analysts and does better than the stockmarket expects; returns are lower if the performance of the company is worse than is expected by the market.

The movements in water share prices since privatisation to the current time are a useful illustration of the role of the market.

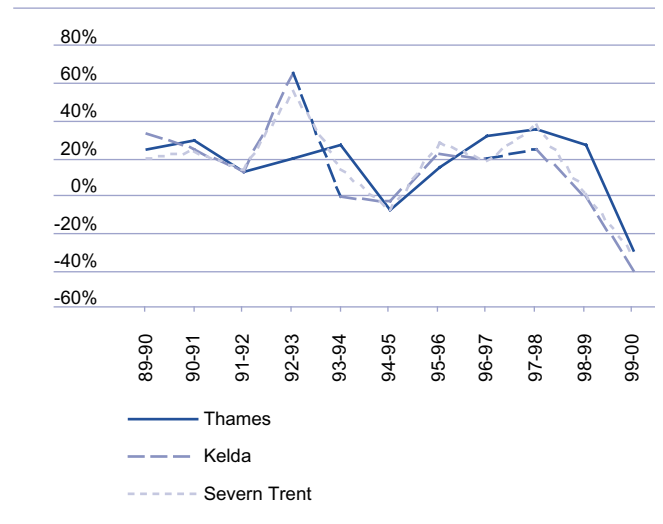
Actual financial performance is less important than the market's perception of what is happening. Figure 26.2 illustrates this:

Figure 26.2: UK Water Sector Index⁶



In the first years after privatisation, the water companies were able to perform better than analysts had expected. The share prices of the companies therefore showed a very healthy return, as Figure 26.3 illustrates.

Figure 26.3: Return on Equity 1992-00⁷



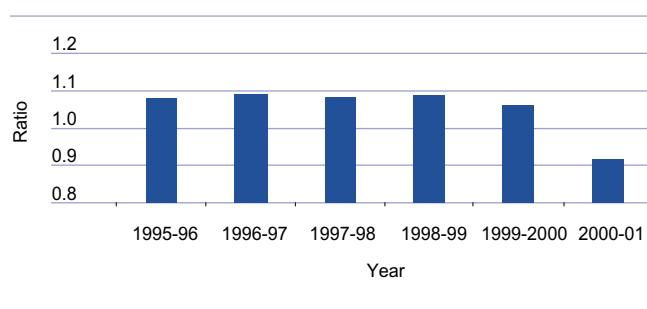
This continued until 1994 when uncertainty relating to the price review caused share prices to decline. Optimism about prospects at the conclusion of the price review quickly led to a high return on equity in the mid 1990s.

⁶ Source: ING Barings Charterhouse Securities

⁷ Source: FT.com and company annual reports and accounts and websites

This continued until 1998, when it became clear that a tougher regulatory regime was in store. At this time, share prices began to perform worse than the market. This was in contrast to the progress that was being made by the companies in improving their profitability to quite a dramatic extent, as Figure 26.4 shows. Although profitability was improving and way ahead of market expectations, the market was valuing the companies less highly. Expectations had been set at a higher level because of their continuing excellent return in the first years after privatisation and the market became disappointed by the likely return from ownership of water company equity after 1998. This decline in expectations more than outweighed the improvement in underlying financial performance.

Figure 26.4: Return on capital employed: Actual return /expected return English and Welsh water companies



Shareholders own the company, but most do not have the interest, expertise or desire to manage the company. They therefore appoint a Board of Directors to advise and to hold management to account. The members of the board are elected at the company's annual general meeting and serve for a fixed number of years (three in the case of Thames Water), unless shareholders decide at a general meeting to remove a member of the board. Both the executive directors (the most senior managers in the company) and the non-executive directors are elected to the board by the shareholders. The voting power of the shareholder reflects the size of that shareholder's interest in the equity of the company.

The Chairman is responsible for the effective running of the board and for ensuring that all directors, executive and non-executive, are consulted so that they can play their full part in the supervision of the company's activities.

The primary responsibility of the board is to determine the strategic direction of the company and oversee its

implementation⁸. There are six formal committees of the Thames board: Nomination, Audit, Remuneration, Environment Review, Charities and Share Dealing. All committees have specific terms of reference, which establish their authority and duties. In particular, the board and its committees are responsible for:

- the adequacy and effectiveness of the company's system of internal control and risk management;
- reviewing board membership and the balance and appointment of directors;
- determining executive directors' contracts of service and remuneration;
- reviewing the company's environmental strategy, performance and reporting systems;
- considering directors' share dealing requests and the implementation of the company's employee share schemes;
- keeping proper accounting records which disclose at any time the financial position of the Group;
- safeguarding the assets of the Group.

As in the public authority model, members of the board are responsible for the appointment of the Chief Executive and the other executive directors. These executive directors are responsible for the day-to-day management of the company and the implementation of the policies and strategies adopted by the board. They are held to account by the board, and the board may offer advice to the executive directors and the senior managers. The remuneration and position of these directors will depend critically upon the extent to which the non-executive directors believe that the company is on track to meet or beat the expectations of its investors.

ii) Accountability

The board of Thames Water is accountable to all 193,000 shareholders. The directors will appear before the annual general meeting of the shareholders and will answer questions and make a statement on trading at that time. In addition, the directors will have an on-going series of meetings with institutional shareholders (the large financial investors). Thames also arranges open days for shareholders, which are held at various locations within the Thames Water region.

There are seven members on the board of Thames Water plc; the Chairman, three non-executive directors and three

⁸ Thames Water plc Annual Report and Accounts 2000

executive directors, namely the Chief Executive, Group Finance Director and the Secretary and Legal Director. All members have significant business experience and have sat on the boards of other leading public companies, including Bass plc, Legal and General plc and Lloyds TSB Group plc.⁹

Understandably, because they are risking their savings (capital) to Thames Water, the shareholders are keen to ensure that the board is made up of the best people available. The non-executive directors are remunerated on a competitive basis and are expected to deliver for shareholders. Shareholders will not hesitate to replace a non-executive who they believe has not been guarding their interests. However, shareholders will not attempt to bypass the board and deal direct with senior management. Nor is management likely to be receptive to such a tactic, even if shareholders were to try. The primacy of the board versus the management is therefore very much clearer in this model than it is under the current public authority model. This ensures that management has only one master.

The board meets every month (except August) to monitor executive management and review the operating and financial performance of the major business units within the company. There is a formal schedule of matters specifically reserved to the board for its decision, including overall strategy, business planning, material acquisitions and disposals and approval of major projects. Appropriate management information is provided to each meeting in a systematic manner.

The board is responsible for maintaining a system of internal financial control. Following a review of the systems in 1999, a process for the identification, evaluation and management of the Group's significant risks was implemented. The procedures adopted by the Group entail risk management reviews in the operating divisions and corporate units and regular reporting of risk management issues to the Audit Committee.

iii) Incentives

Just as the shareholder is keen to ensure that the best directors are running the company, so the board is keen to ensure that it attracts, retains and rewards the best managers available.

From a shareholder perspective, it is important to try to align the interests of management as closely as possible with the interests of the shareholder. Success in achieving a high

degree of alignment will focus managers on the achievement of strategic performance targets. It will ensure that management are prepared to take the difficult decisions in a timely and effective fashion and will do this with the interest of the shareholder to the fore. It is important not only that the remuneration package is set at the right level, but also that it has the right structure, combining the potential for both short, and long-term rewards for achievement of realistic yet challenging performance criteria. The level and structure of executive remuneration can affect both a company's reputation and staff morale within the company.

It is standard practice for executive remuneration to be determined by a Remuneration Committee, usually made up of non-executive directors. The recommendations made by the Greenbury and Hampel Committees have introduced a degree of self-regulation, usually including upper limits on bonuses, part-payment in shares, and disclosure and justification of contracts with notice periods exceeding one year.

The elements of remuneration other than the basic salary are earned by the achievement of challenging performance criteria or hurdles. Performance is usually judged against financial indicators such as total shareholder return, or earnings per share, as well as personal goals. It is expected that bonuses should reflect performance over and above that expected as standard.

From the perspectives of shareholders and customers, it is important that the criteria for awarding bonuses are transparent and that it is clear that bonuses have been earned when awarded.

Effective incentive schemes have several important characteristics:

- remuneration is set at the right level and is comparable with that offered by other similar organisations;
- the remuneration is structured effectively, with a sufficient proportion being performance related;
- the criteria, or hurdles, used to measure performance are clearly defined and transparent and objective evaluation of performance is possible.

These criteria are as true in the public sector as in the private sector.

⁹ Thames Water plc Annual Report and Accounts 2000

f) The differences

Superficial comparison would suggest that the differences between the public sector governance and private sector governance are limited. However, this would be misleading as there are some fundamentally important differences. There is a much clearer role for the board in the private sector and it is more of a priority to attract, almost at any cost, the most qualified people to that board.

My comparison of the public and private water sectors has identified four clear differences that can be summarised as follows:

i) The experience and time commitment of members

Reflecting the emphasis on local accountability, members of the water authorities have traditionally been drawn from backgrounds including local authorities, engineering and education. This contrasts with the commercial operating environment of the private water companies, which demand significant business experience from members. (This is well illustrated by the composition of the board of Thames Water plc before it became a subsidiary of RWE.)

The background and commercial experience of members will directly affect the amount of quality time each needs to invest in order to hold management fully to account. At present, water authority members are contracted to 2-3 days a month. Given their background, this would seem in many cases to be insufficient to enable them to prepare sufficiently and to scrutinise fully all the information and technical information that should be presented by senior management at the regular public and private board meetings.

ii) The level of remuneration of both members and senior management

The average remuneration of water authority members is between £6,000 and £7,000. Thames Water plc non-executive directors receive £25,000, with an additional £2,500 when chairing a committee. There is also a significant difference in remuneration of the chairman. In 1999-2000, the chairman of Thames Water plc received an annual fee of £100,000, compared with the water authority salary of £28,000.

The levels of salary and the levels of incentive are higher in a privatised company. There is, however, a very clear price for failure to deliver fully the expectations of the market.

It is therefore appropriate that, given the greater personal risks, the rewards should be greater. It is also clear that there is greater transparency and rigour in the assessment of bonuses in the private sector. Greater transparency in bonus payments within the Scottish industry would be highly desirable.

Looking to the future, it will be important if the Scottish water industry is to attract the best managers that the remuneration package and conditions of employment are attractive and that performance for customers is prioritised. Clear incentives to drive out inefficiency are likely to be more important in the long term once the initial inefficiencies, which are always easier to implement, have been achieved.

iii) Balance of executive and non-executive directors

There are twelve water authority members, only one of whom is a full time, executive director (the Chief Executive). Private water companies have a balance of executive and non-executive directors.

iv) The relationship between members and owner.

While the role and responsibilities of water authority members are laid down in the Management and Financial Memoranda, in practice there would appear to be some confusion over who is accountable to the de facto owner for the delivery of the authorities' key deliverables. This is evidenced by the fact that there is more direct contact between the owner and senior management than between owner and members.

The board of directors of the private water companies are clearly accountable to the shareholders, who have appointed them to advise and hold the senior management to account. In contrast to the water authorities, there is minimal, if any contact, between shareholders and senior management.

g) The proposed Scottish Water must follow best practice

There is a clear consensus that the Scottish water industry should remain in the public sector. This does not mean that the customer does not want a service that is demonstrably good value for money. Arguably, the public sector should focus only on delivering value to customers and therefore improving service and reducing costs to the frontier level of efficiency. It is clearly in customers interests that the service is as efficient as possible. To achieve my challenging efficiency targets and deliver consistent, first-class customer service, the Scottish water industry will require the highest standards of corporate governance delivered through an experienced commercial 'board' and high-quality senior management. The competitors already enjoy this competitive advantage. The Scottish Executive must therefore follow the best practice of corporate governance.

From the comparison with Thames Water, there would appear to be a very strong case for Scottish Water to have the following attributes:

- Well-defined responsibilities for the Scottish Executive's de facto ownership role, the Board and the senior management, ensuring that accountability of each party is rigorous and transparent.
- High-quality, commercially experienced non-executive board members who will bring openness, thoroughness and objectivity, but will also be able to question and advise senior management when necessary about the operation of the business. In particular, the non-executive directors should have experience in finance, assets and risk management and customer management.
- The right balance of executive and non-executive directors. The boards are crucial in supervising the drive for efficiency. Ideally, the audit and remuneration committees should not have an overlap of non-executive directors; this implies six non-executives. The Water Industry (Scotland) Bill has proposed a board structure of this type.
- Transparent and appropriate incentives and penalties for both non-executive and executive board members and for senior management. This will ensure that the right calibre of professionals are attracted and stay with the proposed Scottish Water.

- Clear setting of the risk profile by the owner, followed by management of risks by the board to the criteria established by the owner. This is critical to the delivery of value for money to customers.

h) The importance of local accountability

I have emphasised the importance of accountability of the board and senior management. It is also essential that the proposed Scottish Water does not lose accountability at a local level. There will be obvious concerns that the creation of one large national authority could weaken the procedures that are currently operated by the three individual authorities to ensure they are accessible and listen to their customers at every level. When he announced the proposals for Scottish Water, the former Minister for the Environment Sam Galbraith stated, "I am committed to ensuring that Scottish Water is responsive to local needs and concerns." I am confident that this objective can be met by:

- a full and transparent programme of customer consultation by the authorities or Scottish Water, the results of which and any subsequent actions are made public, for example, on the authority's web site;
- development of the current programme of public board meetings, treatment works open days, school and community visits.

Lastly, I believe that the current system of my Consultative Committees should be strengthened and extended to ensure that customers' views are passed back to the water authorities and reflected in the development of service levels. I welcome the initiative to establish the Customer Panels in the current Water Services bill.

i) Conclusion

The proposed Scottish Water must be a first class water and sewerage service provider. There is absolutely no reason why it cannot achieve this as a public sector entity, as long as it follows the highest standards of corporate governance and achieves the efficiency targets outlined elsewhere in my Review. It will require high-quality management that are properly and transparently incentivised in order that they deliver the value for money that customers deserve. The current efficiency targets

are more than achievable, but in the future, more challenging targets will take more imagination and commitment to achieve. The management must be held to account by a similarly high-quality, commercially experienced board. The Water Industry (Scotland) Bill, which was published on 27 September 2001, seems to provide a framework for improved corporate governance. If the correct structure and culture is put in place, the Scottish public sector model can thrive against the very best of its competitors.

Section 6: Chapter 27

Governance: Non-core Business

a) Introduction

The principal business activity of water and waste water providers is the provision of water and the removal of waste water through mains pipes to domestic and non-domestic customers. This can be described as core business. New business or non-core business can therefore be defined as any business other than core. This may be a business area that is very closely linked to the core business, for example, laboratory services. It may equally be an activity that is quite different, such as plumbing services or insurance.

This chapter reviews the experience of the privatised companies in England and Wales in generating additional sources of business from non-core activities. I also look at the development of non-core activities in Scotland and their success or otherwise. I conclude that investment in new business by the water authorities or, indeed, by the proposed Scottish Water, would need to be approached very cautiously. There is insufficient evidence that this has the potential to be of significant benefit to customers for the risks to be justified. These risks are not only the capital that is invested (either in cash or in capital investment) in any new venture; there are also risks associated with the diversion of management time away from the main task at hand - the improvement in relative efficiency and the development of more cost reflective tariffs.

It is easy to be distracted by thoughts of profits from non-core activities. This can overlook the extent of the sustainable revenue that will need to be generated and the costs (particularly in the early years) that have to be borne. Currently the Water Industry Act 1999 provides for my office to regulate the authorities and to provide advice on their revenue needs. This therefore requires me to monitor any non-core business activities that have the potential to affect revenue. The need to ensure that accounting separation of activities is required from the authorities is again revisited here, but it has already been discussed in more detail in Chapter 14.

In England and Wales customers' money is not used to fund non-core business. Shareholders of the privatised companies bear all the financial risk. Customer charges for the core business are retained within that core business and there can be no question that a failed venture outside the core business could impact on customer charges in the core business. The

economic regulator, Ofwat, regulates the revenues of the core business and determines the allowable return on capital for the assets employed in the core business. Equally, even a successful venture by the privatised company will not immediately impact upon customers' bills. Only if the board of the company were to decide to reduce the return allowed by the regulator, because of the profit generated elsewhere, would this happen. In this way, shareholders take all the risk associated with non-core activity and, quite equitably, take all the earned return. Ofwat does not in any way regulate the activities of the privatised companies outside the core business (except in the most extreme case where an activity could threaten the company's ability to fulfil a core business license condition).

It is important that customers in Scotland enjoy similar protection, even if the mechanism for safeguarding the customer interest is slightly different. In Scotland, Section 89(2) of the 1994 Local Government (Scotland) Act currently allows the water authorities to enter into a limited range of commercial ventures, subject to the consent of Scottish Ministers. The Water Services Bill presented to Parliament in September 2001 contains provisions that will give the proposed Scottish Water the general power to pursue commercial opportunities, subject to Ministerial direction and guidance.

The financing for any new ventures in Scotland, whether a small opportunity for a start-up with potential for organic growth, or an acquisition, ultimately has to be obtained from customers of the core business or from the taxpayer. If the non-core activity is cash negative, this will consume cash that could have been used by the core business and, at the current time, would impact adversely on customer charges. Commercial opportunities have to be carefully assessed, because even if the venture appears to generate a return relatively quickly, there may be hidden costs (such as costs to exit the business), which could adversely impact on customers' bills in the future.

This area of business has to be kept under close regulatory scrutiny, because only in this way can I ensure that customers receive the best value for money. The accounting separation of the activities of the authorities into at least three areas: retail water services; networks and treatment (both core); and non-core business activities will be essential to the on-going monitoring of the authorities' activities. There would not necessarily be any need for me to regulate the non-core

activities of the authorities after accounting separation, as long as there could be no question or opportunity for cross-subsidy of the non-core activities from the core business. It would also have to be clear that the public expenditure constraints on the core business were not unduly tightened because of support provided to a non-core activity.

I believe that the views expressed above are in line with those contained within the report of the Transport and Environment Committee into the water industry. Accounting separation is the only robust method of ensuring that non-core activities are ring-fenced. This does not mean that I do not support the introduction of the general power to enter into commercial relationships. I do. Indeed I believe that such powers should be contained within legislation, as a situation may arise where it is commercially necessary and advantageous to customers in general to enter into a non-core activity. My concern is related more towards prioritisation of effort within the senior management team. Ministerial Guidance is therefore critical in providing a framework that will ensure that no undue risk is taken with customers' money.

b) Background in England and Wales

In England and Wales, companies have set up non-core business lines through organic growth, acquisition, merger and joint ventures. Severn Trent Water's acquisition of the waste business Biffa can be seen as an example where development of non-core business through acquisitions appears to have been successful and to offer a return greater than in the regulated business. In May 1991, Severn Trent Water paid £212 million for Biffa Waste Services; Biffa accounted for 7.9% of Severn Trent Group's profit, before interest and tax, in the year 2000, at £31.0 million.

There have also been examples where the acquisition of a non-core activity has not been successful, as shown by the acquisition and subsequent disposal of a number of hotels by the Hyder Group. Recent press comment on the acquisition of the Morrisons Group by Anglian Water has also been critical.

Development of non-core business organically has also been undertaken by a number of the water and sewerage companies in England and Wales. This process is naturally slower, but the immediate risk in cash terms is typically lower. However, the

inevitable outturn is that the time period required to generate any significant profit is likely to be lengthy.

There has been continuing investment in the development of non-core business by the privatised companies in England and Wales over the past 12 years. I have carried out extensive research into the various lines of non-core business undertaken by the majority of the companies to determine both the successful ventures and the failures. Information has been drawn from the companies' 1998-99 and 1999-00 Annual Report and Accounts, and from the financial statements released by the companies to the markets. This information has enabled me to develop an insight into the different lines of non-core business.

i) Kinds of non-core business

Table 27.1 shows the types of non-core business in which the 18 remaining water company groups are involved.

Table 27.1: Types of non-core business activities of water companies

Type of non-core business	Number of companies involved in this non-core business out of 18.
Property / construction	14
International business	11
Engineering and other consultancy	10
Energy	9
Laboratory business	9
Facilities management/ outsourcing	9
Plumbing	8
Information technology	6
Technology	6
Waste management	6
Insurance	4
Telecommunications	4
Other ¹	6

Property/construction

This category can include a number of activities, ranging from the construction of above and below ground assets for third-party clients, to revenue generated from the sale of property or

¹ Other includes bottled water, internet services, printing 'mechanical services', mail services, water related product sales e.g. dishwashers.

land. For example, Thames Water's sale of a laboratory building and its conversion into residential flats is included.

International business

International expansion has been a key part of non-core business revenue. International business takes various forms, including consultancy exercises and facilities management as well as acquiring stakes in privatised water utilities abroad. It also includes the operation of concessions and, for several of the privatised companies, this includes activities in Scotland under the PPP scheme.

Engineering and other consultancy

Several of the companies appear to have well-established consultancy divisions. Work undertaken in these divisions includes water efficiency and waste water minimisation advice, as well as consulting on other customer specific issues. Profit margins in this area have generally been small (3%-5%), although information is limited here. The consultancy business of Hyder plc was sold by WPD to the management after the completion of its acquisition.

Laboratory business/energy

Another main type of non-core business development has been revenue generated from laboratory testing services and investment in different sources of energy.

Facilities management/outsourcing

The companies in England and Wales are heavily involved in operating water and waste water facilities, as well as other types of facilities, for external customers e.g Hyder Plc had contracts with some 20% of the NHS Trusts in England and Wales to operate patient electronic records and payroll records.

Table 27.1 shows that the 18 companies surveyed were engaged in 102 areas of non-core activity. This equates to an average of around 6 for each company. While there are some potential synergies between these areas (e.g. consultancy projects in the UK and internationally), it is quite striking how far some of the companies have moved from their core business. This may well be justified, but it is the long-term return to shareholders that will be the determining factor.

The origin of the majority of non-core business relating to the years 1998-99 to 1999-2000 appears to have been the development of opportunities organically rather than through acquisition. This contrasts quite sharply with initial attempts at diversification by the privatised companies. These initial moves were often acquisitive. Yorkshire, Severn Trent, Pennon and Welsh Water all made acquisitions.

I will discuss the relative successes of the ventures below, but it is important to note how much more prepared privatised companies are now to manage their non-core activities as opposed to in the early 1990s. The companies have set up separate divisions, specialising in different areas. This has led to a more focused strategy of growth in an area through a combination of organic growth, acquisition and joint ventures. The companies have also become better at minimising the risk of their non-core activities by pursuing consultancy and international contracts through joint ventures. There has also been a greater focus recently on consulting into the use of water on site and the effluent solutions required by large industrial and commercial customers. In large part, this latter business would appear to be relatively opportunistic, as it typically relies on the tariffs of the incumbent supplier being non-reflective of the true costs of supply. It is instructive that there has been less activity in inset appointments in recent months. This almost certainly reflects the more accurate allocation of economic costs of supply to customers in the tariffs, charged by incumbents.

ii) Profitability of non-core business

There is only very limited information relating to the profitability of non-core business streams for England and Wales. Although it would seem relatively straightforward to look at the Group accounts of those still listed on the Stock Exchange and the accounts of the regulated subsidiary, this would provide a misleading picture. It would not be possible from this information to extract all those costs and revenues of the non-core activities that do not fundamentally rely upon the supply of services to the regulated business. Each of the Groups earns a significant profit from the supply of services to the regulated company and this is likely to dwarf the profit received from other sources. It has been estimated that the Thames Group earned a significant profit from providing insurance services to its subsidiary company, Thames Water Ltd, the regulated business.

Table 27.2: Profitability of non-core business in England

	Turnover for non-regulated business	Profit for non-regulated business	Operating profit/(loss) margin
Wessex 1998	£9.1 m	(£1.4 m)	(15%)
Severn Trent 2000	£698.3 m	£52 m	7%
Yorkshire 2000	£165 m	£7.3 m	4%
Anglian 1999	£94.9 m	(£1.2 m)	(1%)

Table 27.3: Experience of privatised companies in non-core activities

Severn Trent Water	"Severn Trent Systems has been running for five years in which time it generated an accumulated profit of £16.2 million. In the year 2000 this company is expected to make a loss of £2.6 million as a result of additional investment that is required. The board recognises that to realise the full sales and profitability potential that they would have to have global marketing capability."
Severn Trent Water	"Contract operations turnover grew 21% in the year, but profit before interest declined by £2.3 million largely as a result of increased marketing costs, including £1.9 million bidding for contracts in major cities in Europe and USA."
North West Water (United Utilities)	"International development projects are inherently speculative and can take several years to come to fruition".
Welsh Water (Dŵr Cymru)	"The performance of our engineering and environmental consulting business was disappointing, suffering a trading loss in highly competitive markets."
Kelda Group (Yorkshire Water)	"Group has been pursuing certain Public Finance Initiative (PFI) projects as well as researching opportunities in overseas markets. These development costs were £1.3million 1998-99."

It is also difficult to understand the exact nature of the costs allocated to non-core business, and hence to calculate the real profitability. There is limited, if any, transparency on costs such as start-up costs on unsuccessful contract bids. It is likely, therefore, that my estimates will overstate the true profit margin of the various activities. In most cases, my analysis would suggest that profit margins would appear to be less than 10%. The main category for higher margin opportunities is within the property and construction services activity. Although this area seems to report a higher margin, evidence suggests that this high margin results from property disposals. I discuss the scope for property disposals separately in Chapter 20.

Information relating to the profitability of non-core businesses is outlined for a selection of companies in Table 27.2.

Although only for four companies, these figures suggest that the development of non-core business is on the whole not a large generator of profit, and in some cases a source of significant loss. Severn Trent Water's profit largely results from the major acquisition of Biffa and should not be regarded as an example of the potential available to a Scottish authority.

I believe that the importance of this analysis should not be understated when looking at the future of the Scottish water industry. The apparent success achieved by the privatised companies does not bear up to close scrutiny and this is after 12 years of attempts and significant good management in terms of preparing the organisations for future opportunities. This analysis raises a significant question as to whether there can be any case for customers' money to be invested in non-core activities in the short term.

Even after 12 years, it appears that the privatised companies have not yet resolved issues with non-core activities. The companies in England and Wales still encounter difficulties and incur major expenditure in trying to ensure the success of their non-core business.

Table 27.3 includes some comments, which I found during my analysis of the experience of the privatised companies in non-core activities. I believe that they are self-explanatory, and would support my caution.

One of the most interesting aspects of my analysis has been the changing attitude of investors to the non-core activities of the privatised water companies. A few years ago, investors were excited by the potential of the non-regulated business of the water companies and this was reflected in their share prices. In the past two years or so, investors have preferred a “stick to the knitting” approach. This is perhaps best evidenced by the warm reaction to the Glas Cymru bond issue, especially in comparison with the cooler reactions given to other smaller issues. Investors seem to be valuing the relative certainty of the regulated business more highly than the potential of non-core activities.

Another example is that of Pennon Group and its main subsidiary, South West Water, which announced a major strategic change of direction. The UK Water Industry website reports that:

“Plans to change the structure of the company have been dropped. Instead the company is to concentrate on its core of water, sewerage and waste management. All the non-regulated businesses are to be sold except for Viridor waste and a small property management company.

The company said that the two windfall taxes in 1997 and 1998, combined with the recent regulatory review, meant that the company no longer had the resources to invest in the non-regulated business.”

c) The challenges to be faced in Scotland

i) Need to fill information gaps

The information that is currently available in Scotland on costs associated with non-core business is very limited. Before the water authorities can determine if non-core projects are profitable or not, they will have to be able to allocate costs correctly between core and non-core business. A significant amount of work will need to be done before this can be completed accurately in Scotland. The appraisals of new ventures should ensure that there is no internal profit or loss declared, as this will distort the assessment of opportunities. It is imperative that these steps are in place before any new business ventures are undertaken.

ii) Need for efficiencies and delivery of capital programme

The authorities are wholly funded by public money, either through charges levied directly for water and sewerage services, or from loans from the Government (i.e. the taxes of customers). In order that customers receive the best value for money, therefore, it is important that the authorities are held to account for all monies spent.

Three factors that have suggested to me that non-core activities should have a very low priority at the current time. These are the three areas upon which management must focus if customers' interests are to be protected, namely:

- the delivery of the largest capital programme in the history of the Scottish water industry;
- the need to generate over £400 million of efficiencies annually and sustainably by 2005-6;
- the challenge and opportunity posed by the merger of the three authorities into Scottish Water (assuming this is approved by Parliament).

The scope and benefit to customers of achieving the efficiency targets is hugely more significant than even the most optimistic prognosis for non-core business. My review of the experience of the privatised companies in England and Wales clearly suggests that a significant amount of senior management time has gone into non-core opportunities; it is doubtful whether that this would be the best use of scarce management resources at this time. It may be different after 2005, as I noted above, when the efficiency frontier is being approached.

In many of my public meetings and in the quantitative research that I have commissioned, there is a clear consensus that customers want investment in the environment and in water assets. This was also confirmed by the Consultation of the Scottish Executive into the Quality and Standards options (see Chapters 4 and 15). Non-core activities cannot be allowed to distract management from the delivery of this programme. Even a fairly significant profit could not compensate the customer for non-delivery of the outputs of the capital programme.

d) Views of the Transport and Environment Committee

The issues surrounding new business were raised during the recent inquiry into water and the water industry. In a submission to the Transport and Environment Committee, the water authorities proposed the development of mechanisms to ensure that new business ventures would be effectively ring-fenced and would not act as a drain on the water authorities' core activities in terms of cash or other resources.

The Committee's report states:

"In supporting the authorities' ability to invest in commercial ventures the Committee wishes to emphasise the importance of continuing to focus on core activities and fulfilment of statutory duties. The Committee notes that while different authorities indicated in evidence that they intended to fund ventures in different ways, (e.g. West of Scotland Water Authority from charges and East of Scotland Water Authority from efficiencies) in the absence of any new income stream being identified, the money would ultimately be sourced from general funds.

Consequently, it is certainly possible that customers already facing steep charge increases to fund necessary capital investment would not welcome also paying to fund speculative ventures. There is inevitably a dilemma in this difficult situation. However, the cost of not developing and retaining business must also be reckoned with – reducing industrial revenue due to lack of flexibility could lead directly to increased domestic charges greater than those required to fund the modest investment aspirations set out by the authorities.

The Committee recognises that the water authorities will require increased freedom to invest in commercial ventures. However, it supports the view that the water authorities should continue to focus on their core duties and should 'ring-fence' new ventures to ensure that they do not become a drain on resources."

I agree with the broad sentiments expressed by the Committee. From the customers' perspective, however, I believe that the real threat to revenue from on-site water management needs to be properly understood before this is used as a justification for non-core activities. I have developed my views on this in Chapter 11, where I argued that a proper understanding of costs and the setting of appropriate tariffs can mitigate much, if not all, of this risk.

e) Possible exception

One of the new situations where an authority should consider expanding beyond its core services relates to the needs of key large customers. It will be important to meet their needs in terms of levels of service, and this may involve the provision of some value-added activities. However, it is critical that in these instances customers pay a fair price for the services provided. It will not be straightforward to assess the costs of each major customer and to set appropriate tariffs, and consequently some interim measures may be required, which take the authority outside its core activities. The financial consequences of this would, however, need to be assessed very carefully by management - in advance of taking any action.

f) Assumptions in revenue cap calculations

Input assumptions for the financial model reflect my caution on non-core activities. Essentially, I am projecting a commercial return on the funds already invested or planned to be invested, and which have been taken account of elsewhere in the financial projections.

My analysis focuses on the proposed Scottish Water model, where all three authorities' information has been merged. I have assumed that the net profit attributable to non-core activity will grow to £1.8 million by 2005-06.

g) Conclusion

As outlined previously, core business in England and Wales is ring-fenced and customers' bills are unaffected by non-core business activities. A similar approach is needed in Scotland. The reaction of investors to non-core activities in England and Wales has grown increasingly negative and this is probably the most accurate reflection of the potential of these activities.

Important cautionary lessons should be learnt from the English and Welsh water and sewerage companies in their attempts to generate non-core business. Notwithstanding their limited success, it is important to note that they still represent potential competition and have made significant strides in organising themselves to compete for any opportunities that may arise.

It is my view that the authorities' main focus should be on ensuring that customers receive the best value for money.

Customers should not be exposed to any unnecessary risk, and should not be placed in a position where they are funding a loss-making project.

This will be best achieved by ensuring that the water authorities focus on the attainment of efficiency targets and delivery of the capital programme. Prices for customers are still rising during this Review period, but the positive outlook for prices for the next Review period could be threatened by a lack of focus on the major challenges during the next four years.

Section 7

Assessment of Revenue Cap

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Section 7: Chapter 28

Assessment of Revenue Cap: Financial Assumptions

a) Introduction

In this section of my Review I outline my financial assumptions for the proposed Scottish Water and for the existing three authorities. In Chapters 29 to 31, I cover the alternative assumptions used for the three existing authorities. These would apply should the Scottish Water initiative not proceed for any reason. In Chapter 32, I present the results of the financial model for Scottish Water and in Chapter 33 I discuss the results of my risk analysis for Scottish Water. In Chapters 34 to 36, I outline the alternative results for the existing three authorities (in the event that Scottish Water does not proceed) and, in Chapter 37, my analysis of the risk to public expenditure in the three authority scenario. Chapter 38 indicates the implications for customer charges and Chapter 39 discusses the outlook for the next regulatory review period, 2006-10.

This chapter sets out the assumptions that I have used for the proposed Scottish Water. I have used these assumptions to generate the appropriate revenue caps. The detail of the financial model is described in Chapter 10.

b) Macro-economic assumptions

I have used the inflation rates set out in the Table 28.1.

Table 28.1: Inflation rate assumptions

	2001-02 to 2016-17
Operating expenditure	2.5%
Capital expenditure	1.5%

I have assumed that the total real cost of long-term debt remains at 2.3%. I add my estimate of operating cost and inflation to this real cost to determine the interest cost of new loans.

Table 28.3: Investment programme profile

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total infrastructure spend	£106.4m	£97.4m	£100.0m	£187.6m	£213.7m	£242.4m	£243.0m	£246.7m	£250.1m
Total quality spend	£358.5m	£409.1m	£413.3m	£482.0m	£456.3m	£354.7m	£347.5m	£347.8m	£302.9m
Spend to Save capital expenditure	£0.0m	£15.0m	£35.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 28.2: Assumptions on interest cost of new loans

Real	2.3%
Inflation	2.5%
Actual	4.8%

I have used the current Retail Price Index to fix operating expenditure inflation. I have used the Construction Operators Price Index (COPI) to set capital investment inflation.

i) Sources of information for 1998-99 to 2000-01

I have taken information for 1998-99 and 1999-2000 from the audited accounts. My Annual Return is the source of 2000-01 data. I have received confirmation from the authorities that their Annual Return data is wholly consistent with their 2000-01 audited accounts.

c) Scottish Water

This chapter outlines the assumptions that I have used in my financial model for Scottish Water. It should be read in conjunction with Chapter 10, which describes the functionality of the financial model. The assumptions in this chapter result in the revenue caps for Scottish Water outlined in Chapter 32.

My assumptions include the appropriate inflation index.

d) Balance sheet

i) Assets and depreciation

Capital expenditure

I have re-profiled, in consultation with industry management, the original water authority submissions to the Quality and Standards process. My phased profile of the investment programme is shown below. This investment is split between infrastructure, 'quality' and the capital element of the proposed Spend to Save expenditure (see Chapters 15, 19 and 21).

Table 28.4: Assumptions on useful asset life of asset additions

	2001-02 onwards
1 year	0.0%
3 years	17.0%
4 years	1.0%
5 years	2.0%
6 years	2.0%
7 years	0.0%
10 years	7.0%
15 years	0.0%
20 years	20.0%
25 years	15.0%
30 years	0.0%
40 years	5.0%
60 years	18.0%
80 years	0.0%
100 years	0.0%
Infinite	13.0%

I have divided the 'quality' additions to the asset base by their expected useful life. My assumptions are set out in Table 28.4. Infrastructure investment is expensed in the year of purchase through the income and expenditure account. I have assumed that the Spend to Save capital expenditure allocation relates to IT and is therefore depreciated over 3 years.

Depreciation

I have applied a full annual depreciation charge to an asset purchased during the year. The rates of depreciation directly reflect the asset useful lives and are as shown in Table 28.5.

Modified historic cost revaluation

I have made cumulative modified historic cost adjustments to asset cost and to accumulated depreciation from the start of the 2001-02 financial year. From the current year onward, I have made annual adjustments to incorporate annual capital expenditure inflation.

Table 28.6: Assumed proceeds from asset disposals

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Asset disposal proceeds	£0.0m	£8.4m	£8.8m	£9.2m	£9.7m	£0.0m	£0.0m	£0.0m	£0.0m

Table 28.5: Depreciation rates derived from assumed asset life

	2001-02 onwards
1 year	100.0%
3 years	33.3%
4 years	25.0%
5 years	20.0%
6 years	16.7%
7 years	14.3%
10 years	10.0%
15 years	6.7%
20 years	5.0%
25 years	4.0%
30 years	3.3%
40 years	2.5%
60 years	1.7%
80 years	1.3%
100 years	1.0%
Infinite	0.0%

Asset disposals

I have assumed that assets are sold with no residual value at the end of their useful lives. Any proceeds from the sale of asset disposals are therefore assumed to generate a profit on disposal equal to the selling price. My expectation of the proceeds from disposals (and hence my expectation of profit on disposal) are set out in Table 28.6

ii) Capital expenditure efficiency

I have applied my efficiency targets to the capital expenditure figures detailed above. I have excluded Spend to Save capital expenditure. I have split the assumptions for capital expenditure efficiency targets between my efficiency target on actual physical capital expenditure and my separate targeted efficiency on capitalised labour (see Chapter 19). The capital expenditure efficiency targets are shown in Table 28.7.

iii) Other assets and liabilities

I have calculated other asset and liability categories as a

Table 28.7: Capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Capital expenditure efficiency	0.0%	14.0%	19.9%	25.2%	30.9%	31.7%	32.8%	34.1%	35.1%
Capitalised labour efficiency	0.0%	14.0%	19.9%	26.0%	30.4%	33.0%	34.2%	35.5%	36.5%

Table 28.8: Assumptions on other assets and liabilities

	2001-02 onwards
Stocks	0.9%
Debtors	19.0%
Cash	0.0%
Current liabilities	-25.0%
Creditors > 1 year	-2.0%
Provisions	£0.0m

percentage of revenue in the year. The percentages used are in line with the results of historic data (1996-97 to 1999-2000). I have made no allowance for provisions since these costs are expected to be incorporated into Spend to Save operating expenditure. My assumptions are shown in Table 28.8.

iv) Government and other loans

I have taken the historical loan balances from the note in the 1999-2000 financial statements concerning loan maturities by interest rate. I have assumed the repayment of these loans at their expected maturity. I have applied the appropriate weighted average cost of debt to reflect the total debt outstanding at each particular interest rate. These loan balances are shown in Table 28.9.

Table 28.9: Existing loan base by interest rate and date of maturity

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
4.5%	£0m	£0m	£0m	£8,750m	£11,250m	£11,250m	£11,250m	£8,636m	£14,696m
5.5%	£0m	£1,667m	£1,667m	£2,917m	£1,278m	£1,278m	£1,278m	£2,396m	£5,889m
6.5%	£1,024m	£2,426m	£2,426m	£1,667m	£856m	£857m	£858m	£4,373m	£6,566m
7.5%	£10,685m	£23,189m	£23,189m	£24,334m	£15,213m	£15,213m	£15,213m	£15,041m	£18,384m
8.5%	£4,437m	£12,499m	£12,499m	£5,960m	£8,522m	£8,522m	£8,522m	£5,117m	£2,056m
9.5%	£1,912m	£6,150m	£6,150m	£6,643m	£8,903m	£8,903m	£8,903m	£4,291m	£5,814m
10.5%	£2,412m	£3,468m	£3,468m	£6,304m	£10,640m	£10,640m	£10,640m	£6,405m	£3,812m
11.5%	£87m	£226m	£226m	£3,737m	£5,534m	£5,534m	£5,534m	£1,925m	£378m
12.5%	£21m	£3m	£3m	£0m	£278m	£279m	£280m	£277m	£0m
13.5%	£1m	£28m	£28m	£209m	£181m	£181m	£181m	£0m	£7m
14.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£8m
TOTAL	£20,579m	£49,656m	£49,656m	£60,521m	£62,655m	£62,657m	£62,659m	£48,461m	£57,610m

All new loan balances result from the net inflow/(outflow) from the cash flow statement. I have taken these to be long-term loans and they therefore do not fall due within the period of the model. I have assumed that the authorities would choose long-term loans due to the existence of a downward sloping yield curve (see Chapter 16). I have used my estimate of the long-term cost of debt for all new loans.

v) Income and expenditure account

I have assumed that the chargeable base for domestic customers will grow in line with the housing market. I have used information available from Scottish Housing. I have assumed that annual growth in the housing stock will average 0.7%. This allows for demolition and for subdivision of existing properties.

I have not assumed any change in chargeable base for customers receiving secondary services. I have assumed a 15% annual increase in the trade effluent chargeable base.

My assumptions for the chargeable base by customer category are shown in Table 28.10.

Table 28.10: Assumed rate of annual change in chargeable customer category

	2001-02	2002-03 onwards
Domestic customers	100.0%	100.7%
Other non-domestic	100.0%	100%
Large user	79.3%	100%
Trade effluent	75.8%	115%
Secondary	100.0%	100%

vi) Revenue and capital grants

I have not included any revenue or capital grants since I do not expect these to be material.

Operating expenditure

I have taken controllable base operating cost from the 2000-01 annual accounts of the three authorities. I have adjusted operating costs for any inter-authority trading. This operating cost allowance increases in line with inflation. I have set the level of operating expenditure efficiency in line with my targets (see Chapter 18). The levels of base controllable operating expenditure and operating efficiency are detailed in Table 28.11.

Merger efficiencies

Merger efficiencies are the savings that I expect to result from

the merger of the three authorities (see Chapter 20). They are shown in Table 28.12.

Public Private Partnership (PPP) charges

I have used the water authority estimates of PPP charges. My source is the Strategic Business Plans submitted by the authorities. I have combined their estimates to calculate the position for Scotland. PPP costs within the Strategic Business Plans are fixed by contract. I therefore do not expect the estimates to change materially. The assumed PPP charges are shown in Table 28.13.

Spend to Save

I have based Spend to Save operating expenditure on my assessment of the requirements for Spend to Save. I have split this between operating expenditure and capital expenditure in the proportion which I expect the authorities to use this budget (see Chapter 21). The profile of expected Spend to Save can be seen in Table 28.14.

Level of service increment

Level of service increment represents the additional new operating expenditure that I will allow the authorities to spend on improving their level of service (see Chapter 18). This is shown in Table 28.15.

Table 28.11: Operating expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Controllable base operating expenditure	£360.1m	£321.8m	£297.5m	£288.4m	£278.7m	£277.1m	£275.5m	£273.9m	£272.3m
Operating expenditure efficiency	4.1%	16.4%	24.6%	28.7%	32.8%	34.8%	36.7%	38.6%	40.5%

Table 28.12: Assumed merger efficiency savings

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Merger efficiencies	£0.0m	£20.0m	£25.0m	£29.3m	£29.3m	£29.3m	£29.3m	£29.3m	£29.3m

Table 28.13: Assumed Public Private Partnership (PPP) Charges

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
PPP charges	£57.0m	£111.6m	£116.7m	£118.8m	£122.7m	£125.8m	£129.0m	£132.2m	£135.5m

Table 28.14: Assumed profile of Spend to Save operating expenditure

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Spend to Save operating expenditure	£0.0m	£40.0m	£85.0m	£25.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 28.15: Assumed level of service operating expenditure

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Level of service increment	£0.4m	£2.5m	£4.6m	£6.8m	£9.0m	£17.4m	£21.4m	£25.6m	£30.0m

Table 28.16: Inter-authority trading balance for 2000-01

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Inter-authority sales	£7.6m	£7.8m	£8.0m	£8.2m	£8.4m	£8.6m	£8.8m	£9.0m	£9.2m
Inter-authority costs	£5.2m	£5.3m	£5.4m	£5.6m	£5.7m	£5.8m	£6.0m	£6.1m	£6.3m

Table 28.17: Assumed net profit from new business

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
New business net profit	£0.1m	£0.5m	£1.1m	£1.4m	£1.8m	£2.1m	£2.1m	£2.2m	£2.2m

Table 28.18: Scottish Executive resource accounting baseline budget

	2001-02	2002-03	2003-04	2004-05	2005-06
Baseline budget	£302.3m	£314.3m	£299.7m	£299.7m	£299.7m

vii) Inter-authority balances

I have estimated inter-authority balances from both the revenue and costs of the proposed Scottish Water. The three authorities supplied these inter-authority trading balances for 2000-01.

viii) New business net profit

I have assumed the net profit from activities in the financial model as shown in Table 28.17. I have estimated this profit from information received from the water authorities on spending to date and on research on new business activity in England and Wales (see Chapter 27).

(ix) Baseline Budget under resource accounting and budgeting

The Scottish Executive has set the resource accounting baseline budget to which Scottish Water must adhere. These limits are set as shown in Table 28.18.

Section 7: Chapter 29

Assessment of Revenue Cap: Financial Assumptions – East of Scotland Water Authority

This chapter outlines the assumptions which I have used in my financial model for East of Scotland Water Authority. This chapter should be read in conjunction with Chapter 10, which describes the functionality of the financial model. The assumptions in this chapter result in the revenue caps for East of Scotland Water Authority outlined in Chapter 40.

All my assumptions include the appropriate inflation index.

a) Balance sheet

i) Assets and depreciation

Capital expenditure

I have re-profiled, in consultation with industry management the original East of Scotland Water Authority submissions to the Quality and Standards process. My phased profile of the investment programme is shown in Table 29.1 below. This investment is split between infrastructure, 'quality' and the capital element of the proposed Spend to Save expenditure (see Chapters 15, 19 and 21).

I have divided the 'quality' additions to the asset base by their expected useful life. My assumptions are set out in Table 29.2. Infrastructure investment is expensed in the year of purchase through the profit and loss account. I have assumed that the Spend to Save capital expenditure allocation relates to IT and is therefore depreciated over three years.

Depreciation

I have applied a full annual depreciation charge to an asset purchased during the year. The rates of depreciation directly reflect the asset useful lives and are as shown in Table 29.3.

Table 29.1: Investment programme profile

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total infrastructure spend	£31.7m	£30.1m	£28.0m	£48.6m	£60.5m	£54.7m	£55.5m	£56.3m	£57.2m
Total quality Spend	£99.8m	£107.6m	£123.6m	£111.7m	£117.2m	£125.8m	£127.6m	£129.6m	£131.5m
Spend to Save capital expenditure	£0.0m	£4.7m	£10.9m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 29.2: Assumptions on useful asset life of asset additions

	2001-02 onwards
1 year	0.0%
3 years	17.0%
4 years	1.0%
5 years	2.0%
6 years	2.0%
7 years	0.0%
10 years	7.0%
15 years	0.0%
20 years	20.0%
25 years	15.0%
30 years	0.0%
40 years	5.0%
60 years	18.0%
80 years	0.0%
100 years	0.0%
Infinite	13.0%

Table 29.3: Depreciation rates derived from assumed asset life

	2001-02 onwards
1 year	100.0%
3 years	33.3%
4 years	25.0%
5 years	20.0%
6 years	16.7%
7 years	14.3%
10 years	10.0%
15 years	6.7%
20 years	5.0%
25 years	4.0%
30 years	3.3%
40 years	2.5%
60 years	1.7%
80 years	1.3%
100 years	1.0%
Infinite	0.0%

Modified historic cost revaluation

I made cumulative modified historic cost adjustments to asset cost and to accumulated depreciation from the start of the 2001-02 financial year. From the current year onward, I have made annual adjustments to incorporate annual capital expenditure inflation.

Asset disposals

I assumed that assets are sold with no residual value at the end of their useful lives. Any proceeds from the sale of asset disposals are therefore assumed to generate a profit on disposal equal to the selling price. My expectation of the proceeds from disposals (and hence my expectation of profit on disposal) are as shown in Table 29.4.

ii) Capital expenditure efficiency

I applied my efficiency targets to the capital expenditure figures detailed above. I excluded Spend to Save capital expenditure. I split the assumptions for capital expenditure efficiency targets between my efficiency target on actual physical capital expenditure and my separate targeted efficiency on capitalised labour (see Chapter 19). The capital expenditure efficiency targets are shown in Table 29.5.

Table 29.4: Assumed proceeds from asset disposals

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Asset disposal proceeds	£0.0m	£1.1m	£1.2m	£1.2m	£1.2m	£0.0m	£0.0m	£0.0m	£0.0m

Table 29.5: Capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Capital expenditure efficiency	0.0%	18.0%	24.0%	28.0%	34.0%	35.4%	36.8%	38.2%	39.8%
Capitalised labour efficiency	0.0%	18.0%	24.0%	29.0%	33.3%	37.1%	38.6%	40.2%	41.8%

Table 29.6: Assumed achievement of capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06
Achievement of efficiency target (Capital expenditure efficiency)	100%	100%	79.6%	72.8%	62.5%
Achievement of efficiency target (capitalised labour)	100%	100%	78.0%	68.9%	62.5%

The targets for the proposed Scottish Water are set so as to close 80% of the efficiency gap between the privatised water and sewerage companies of England and Wales and the three water authorities in Scotland. I have assumed that should East of Scotland Water Authority remain a separate organisation, it would achieve the proportions of the annual efficiency targets outlined in Table 29.6.

iii) Other assets and liabilities

I calculated other asset and liability categories as a percentage of revenue in the year. The percentages used are in line with the results of historic data (1996-97 to 1999-00). I made no allowance for provisions since these costs are expected to be incorporated into Spend to Save operating expenditure. My assumptions are shown in Table 29.7.

Table 29.7: Assumptions on other assets and liabilities

	2001-02 onwards
Stocks	0.9%
Debtors	19.0%
Cash	0.0%
Current liabilities	-25.0%
Creditors > 1 year	-2.0%
Provisions	£0.0m

iv) Government and other loans

I have taken the historical loan balances from the note in the 1999-2000 financial statements concerning loan maturities by interest rate. I have assumed the repayment of these loans at their expected maturity. I have applied the appropriate weighted average cost of debt to reflect the total debt outstanding at each particular interest rate. These loan balances are shown in Table 29.8.

All new loan balances result from the net inflow/(outflow) from the cash flow statement. I have taken these to be long-term loans and they therefore do not fall due within the period of the model. I have assumed that the authorities would choose long-term loans due to the existence of a downward sloping yield curve (see Chapter 16). I have used my estimate of the long-term cost of debt for all new loans.

b) Income and expenditure account

I have assumed that the chargeable base for domestic customers will grow in line with the housing market. I have used information available from Scottish Housing. I have assumed that annual growth in the housing stock will average 0.7%. This allows for demolition and for subdivision of existing properties.

I have not assumed any change in chargeable base for customers receiving secondary services. I have assumed a 15% annual increase in the trade effluent chargeable base.

Table 29.9: Assumed rate of annual change in chargeable base by customer category

	2001–02	2002–03 onwards
Domestic customers	100.0%	100.7%
Other non-domestic	100.0%	100%
Large user	85.0%	100%
Trade effluent	85.0%	115%
Secondary	100.0%	100%

My assumptions for the chargeable base by customer category are as shown in Table 29.9.

j) Revenue and capital grants

I have not included any revenue or capital grants since I do not expect these to be material.

Operating expenditure

I have taken controllable base operating cost from the 2000-01 annual accounts of the three authorities. I have adjusted operating costs for any inter-authority trading. This operating cost allowance increases in line with inflation. I have set the level of operating expenditure efficiency in line with my targets (see Chapter 18). The levels of base controllable operating expenditure and operating efficiency are detailed in Table 29.10.

Table 29.8: Existing loan base by interest rate and date of maturity

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
4.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£6,667m
5.5%	£0m	£0m	£0m	£0m	£28m	£28m	£28m	£28m	£1,857m
6.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£1,619m
7.5%	£10,000m	£14,658m	£14,658m	£14,658m	£7,086m	£7,086m	£7,086m	£7,086m	£3,095m
8.5%	£1,944m	£1,005m	£1,005m	£1,005m	£3,554m	£3,554m	£3,554m	£3,554m	£1,148m
9.5%	£1,004m	£771m	£771m	£771m	£1,416m	£1,416m	£1,416m	£1,416m	£3,898m
10.5%	£1,143m	£658m	£658m	£658m	£2,807m	£2,807m	£2,807m	£2,807m	£2,340m
11.5%	£45m	£45m	£45m	£45m	£1,099m	£1,099m	£1,099m	£1,099m	£304m
12.5%	£0m	£0m	£0m	£0m	£262m	£262m	£262m	£262m	£0m
13.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£4m
14.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£4m
TOTAL	£14,136m	£17,137m	£17,137m	£17,137m	£16,252m	£16,252m	£16,252m	£16,252m	£20,936m

Table 29.10: Operating expenditure efficiency targets

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Controllable base operating expenditure	£101.3m	£94.0m	£94.7m	£96.2m	£97.7m	£97.9m	£98.1m	£98.4m	£98.8m
Operating expenditure efficiency	3.1%	12.3%	18.4%	21.5%	24.5%	27.6%	30.5%	33.2%	35.9%

Table 29.11: Assumed achievement of operating expenditure efficiency targets

	2001–02	2002–03	2003–04	2004–05	2005–06
Achievement of efficiency target	100%	100%	75.0%	67.9%	62.5%

Table 29.12: Assumed Public Private Partnership (PPP) charges

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
PPP charges	£23.0m	£30.0m	£33.0m	£34.0m	£35.0m	£35.9m	£36.8m	£37.7m	£38.7m

Table 29.13: Assumed profile of Spend to Save operating expenditure

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Spend to Save operating expenditure	£0.0m	£12.4m	£26.4m	£7.8m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 29.14: Assumed level of service operating expenditure

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Level of service increment	£0.0m	£0.8m	£1.7m	£2.6m	£3.6m	£4.6m	£5.9m	£7.3m	£8.7m

The operating efficiency targets for East of Scotland Water Authority are set at a percentage of the targets set for Scotland. The targets for Scotland are based on achieving 80% of the efficiency gap between England and Wales and Scotland. The phasing of efficiencies for East of Scotland Water Authority under Scottish Water ensures that the 80% gap is achieved by 2005-06. The proportion of these targets achieved should East of Scotland Water Authority remain a separate authority is shown in Table 29.11.

Public Private Partnership (PPP) charges

I have used the water authority estimates of PPP charges. My source is the Strategic Business Plans submitted by the authorities. I have combined their estimates to calculate the position for Scotland. PPP costs within the Strategic Business Plans are fixed by contract. I therefore do not expect the estimates to change materially. The assumed charges can be seen in Table 29.12.

Spend to Save

I have based Spend to Save operating expenditure on my assessment of the requirements for Spend to Save. I have split this between operating expenditure and capital expenditure in the proportion which I expect the authorities to use this budget (see Chapter 21). The profile of expected Spend to Save can be seen in Table 29.13.

Level of service increment

Level of service increment represents the additional new operating expenditure that I will allow the authorities to spend on improving their level of service (see Chapter 18). The assumed expenditure can be seen in Table 29.14.

Table 29.15: Assumed net profit from new business

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
New business net profit	£0.0m	£0.2m	£0.4m	£0.4m	£0.4m	£0.7m	£0.7m	£0.8m	£0.8m

Table 29.16: Scottish Executive resource accounting baseline budget

	2001–02	2002–03	2003–04	2004–05	2005–06
Baseline budget	£83.8m	£87.1m	£83.1m	£83.1m	£83.1m

Table 29.17: Scottish Executive resource accounting alternative baseline budget

	2001–02	2002–03	2003–04	2004–05	2005–06
Baseline budget	£83.8m	£77.1m	£75.4m	£40.0m	£49.8m

ii) New business net profit

I have assumed the net profit shown in Table 29.15 from activities in the financial model. I have estimated this profit from information received from the water authorities on spending to date and on research on new business activity in England and Wales (see Chapter 27).

iii) Baseline Budget under resource accounting and budgeting

The Scottish Executive has set the resource accounting baseline budget to which East of Scotland Water Authority must adhere. These limits are set as shown in Table 29.16.

The assumptions have also been used with an alternative baseline budget. The new phasing gives a more equitable price profile across all three authorities. These limits are set as shown in Table 29.17.

Section 7: Chapter 30

Assessment of Revenue Cap: Financial Assumptions – North of Scotland Water Authority

This chapter outlines the assumptions that I have used in my financial model for North of Scotland Water Authority. This chapter should be read in conjunction with Chapter 10, which describes the functionality of the financial model. The assumptions in this chapter result in the revenue caps for North of Scotland Water Authority outlined in Chapter 40.

My assumptions include the appropriate inflation index.

a) Balance sheet

i) Assets and depreciation

Capital expenditure

I have re-profiled, in consultation with industry management, the original water authority submissions to the Quality and Standards process. My phased profile of the investment programme is shown in Table 30.1 below. This investment is split between infrastructure, 'quality' and the capital element of the proposed spend to save expenditure (see Chapters 15, 19 and 21).

I have divided the 'quality' additions to the asset base by their expected useful life. My assumptions are set out in Table 30.2. Infrastructure investment is expensed in the year of purchase through the profit and loss account. I have assumed that the Spend to Save capital expenditure allocation relates to IT and is therefore depreciated over three years.

Depreciation

I have applied a full annual depreciation charge to an asset purchased during the year. The rates of depreciation directly reflect the asset useful lives and are as shown in Table 30.3.

Table 30.1: Investment programme profile

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Total infrastructure spend	£32.3m	£42.1m	£42.9m	£65.7m	£74.6m	£95.9m	£94.3m	£95.8m	£96.9m
Total quality spend	£119.8m	£151.0m	£126.4m	£169.4m	£141.0m	£130.5m	£120.0m	£116.9m	£68.5m
Spend to Save capital expenditure	£0.0m	£3.5m	£8.1m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 30.2: Assumptions on useful asset life of asset additions

	2001–2002 onwards
1 year	0.0%
3 years	17.0%
4 years	1.0%
5 years	2.0%
6 years	2.0%
7 years	0.0%
10 years	7.0%
15 years	0.0%
20 years	20.0%
25 years	15.0%
30 years	0.0%
40 years	5.0%
60 years	18.0%
80 years	0.0%
100 years	0.0%
Infinite	13.0%

Table 30.3: Depreciation rates derived from assumed asset life

	2000–01 onwards
1 year	100.0%
3 years	33.3%
4 years	25.0%
5 years	20.0%
6 years	16.7%
7 years	14.3%
10 years	10.0%
15 years	6.7%
20 years	5.0%
25 years	4.0%
30 years	3.3%
40 years	2.5%
60 years	1.7%
80 years	1.3%
100 years	1.0%
Infinite	0.0%

Modified historic cost revaluation

I have made cumulative modified historic cost adjustments to asset cost and to accumulated depreciation from the start of the 2001-02 financial year. From the current year onward, I have made annual adjustments to incorporate annual capital expenditure inflation.

Asset disposals

I have assumed that assets are sold with no residual value at the end of their useful lives. Any proceeds from the sale of asset disposals are therefore assumed to generate a profit on disposal equal to the selling price. My expectation of the proceeds from disposals (and hence my expectation of profit on disposal) are as set out in Table 30.4.

ii) Capital expenditure efficiency

I have applied my efficiency targets to the capital expenditure figures detailed above. I have excluded Spend to Save capital expenditure. I have split the assumptions for capital expenditure efficiency targets between my efficiency target on actual physical capital expenditure and my separate targeted efficiency on capitalised labour (see Chapter 19). The capital expenditure efficiency targets are shown in Table 30.5.

Table 30.4: Assumed proceeds from asset disposals

Asset disposal proceeds	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
	£0.0m	£1.2m	£1.2m	£1.2m	£1.2m	£0.0m	£0.0m	£0.0m	£0.0m

Table 30.5: Capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Capital expenditure efficiency	0.0%	18.0%	24.0%	28.0%	34.0%	35.4%	36.8%	38.2%	39.8%
Capitalised labour efficiency	0.0%	18.0%	24.0%	29.0%	33.3%	37.1%	38.6%	40.2%	41.8%

Table 30.6: Assumed achievement of capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06
Achievement of efficiency target (Capital expenditure efficiency)	100%	100%	79.6%	72.8%	62.5%
Achievement of efficiency target (capitalised labour)	100%	100%	78.0%	68.9%	62.5%

The targets for the proposed Scottish Water are set so as to close 80% of the efficiency gap between the privatised water and sewerage companies of England and Wales and the three water authorities in Scotland. I have assumed that should North of Scotland Water Authority remain a separate organisation it would achieve the proportions of the annual efficiency targets outlined in Table 30.6 below.

iii) Other assets and liabilities

I have calculated other asset and liability categories as a percentage of revenue in the year. The percentages used are in line with the results of historic data (1996-97 to 1999-2000). I have made no allowance for provisions since these costs are expected to be incorporated into Spend to Save operating expenditure. My assumptions are shown in Table 30.7.

Table 30.7: Assumptions on other assets and liabilities

	2001-2002 onwards
Stocks	0.9%
Debtors	19.0%
Cash	0.0%
Current liabilities	-25.0%
Creditors > 1 year	-2.0%
Provisions	£0.0m

iv) Government and other loans

I have taken the historical loan balances from the note in the 1999-2000 financial statements concerning loan maturities by interest rate. I have assumed the repayment of these loans at their expected maturity. I have applied the appropriate weighted average cost of debt to reflect the total debt outstanding at each particular interest rate. These loan balances are shown in Table 30.8.

All new loan balances result from the net inflow/(outflow) from the cash flow statement. I have taken these to be long-term loans and they therefore do not fall due within the period of the model. I have assumed that the authorities would choose long-term loans due to the existence of a downward sloping yield curve (see Chapter 16). I have used my estimate of the long-term cost of debt for all new loans. The existing loan base is shown in Table 30.8.

b) Income and expenditure account

I have assumed that the chargeable base for domestic customers will grow in line with the housing market. I have used information available from Scottish Housing. I have assumed that annual growth in the housing stock will average 0.7%. This allows for demolition and for subdivision of existing properties.

I have not assumed any change in chargeable base for customers receiving secondary services. I have assumed a 15% annual increase in the trade effluent chargeable base.

Table 30.9: Assumed rate of annual change in chargeable base by customer category

	2001-02	2002-03 onwards
Domestic customers	100.0%	100.7%
Other non-domestic	100.0%	100%
Large user	45.0%	100%
Trade effluent	45.0%	115%
Secondary	100.0%	100%

My assumptions for the chargeable base by customer category are as set out in Table 30.9.

i) Revenue and capital grants

I have not included any revenue or capital grants since I do not expect these to be material.

Operating expenditure

I have taken controllable base operating cost from the 2000-01 annual accounts of the three authorities. I have adjusted operating costs for any inter-authority trading. This operating cost allowance increases in line with inflation. I have set the level of operating expenditure efficiency in line with my targets (see Chapter 18). The levels of base controllable operating expenditure and operating efficiency are detailed in Table 30.10.

Table 30.8: Existing loan base by interest rate and date of maturity

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
4.5%	£0m	£0m	£0m	£0m	£2,500m	£2,500m	£2,500m	£2,500m	£1,894m
5.5%	£0m	£1,667m	£1,667m	£1,667m	£0m	£0m	£0m	£0m	£1,664m
6.5%	£0m	£1,667m	£1,667m	£1,667m	£855m	£855m	£855m	£855m	£1,429m
7.5%	£69m	£1,549m	£1,549m	£1,549m	£0m	£0m	£0m	£0m	£7,333m
8.5%	£1,261m	£1,013m	£1,013m	£1,013m	£1,026m	£1,026m	£1,026m	£1,026m	£371m
9.5%	£518m	£218m	£218m	£218m	£1,833m	£1,833m	£1,833m	£1,833m	£874m
10.5%	£1,112m	£488m	£488m	£488m	£2,675m	£2,675m	£2,675m	£2,675m	£549m
11.5%	£42m	£42m	£42m	£42m	£785m	£785m	£785m	£785m	£33m
12.5%	£21m	£0m	£0m	£0m	£15m	£15m	£15m	£15m	£0m
13.5%	£1m	£28m	£28m	£28m	£0m	£0m	£0m	£0m	£4m
14.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£4m
TOTAL	£3,024m	£6,672m	£6,672m	£6,672m	£9,689m	£9,689m	£9,689m	£9,689m	£14,155m

Table 30.10: Operating expenditure efficiency targets

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Controllable base operating expenditure	£90.5m	£81.6m	£81.7m	£82.8m	£83.9m	£84.1m	£84.4m	£84.8m	£85.1m
Operating expenditure efficiency	3.9%	15.4%	23.1%	27.0%	30.9%	33.6%	36.3%	38.8%	41.3%

Table 30.11: Assumed achievement of operating expenditure efficiency targets

	2001–02	2002–03	2003–04	2004–05	2005–06
Achievement of efficiency target	100%	100%	75.0%	67.9%	62.5%

Table 30.12: Assumed Public Private Partnership (PPP) charges

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
PPP charges	£23.0m	£47.3m	£48.4m	£49.7m	£50.9m	£52.2m	£53.5m	£54.8m	£56.2m

Table 30.13: Assumed profile of Spend to Save operating expenditure

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Spend to Save operating expenditure	£0.0m	£9.3m	£19.7m	£5.8m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 30.14: Assumed level of service operating expenditure

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
Level of service increment	£0.4m	£0.9m	£1.3m	£1.7m	£2.1m	£7.0m	£8.3m	£9.8m	£0.0m

The operating efficiency targets for North of Scotland Water Authority are set at a percentage of the targets set for Scotland. The targets for Scotland are based on achieving 80% of the efficiency gap between England and Wales and Scotland. The phasing of efficiencies for North of Scotland Water Authority under Scottish Water ensures that the 80% gap is achieved by 2005-06. The proportion of these targets achieved should North of Scotland Water Authority remain a separate authority is shown in Table 30.11.

Public Private Partnership (PPP) charges

I have used the water authority estimates of PPP charges. My source is the Strategic Business Plans submitted by the authorities. I have combined their estimates to calculate the position for Scotland. PPP costs within the Strategic Business Plans are fixed by contract. I therefore do not expect the estimates to change materially. The assumed charges are shown in Table 30.12.

Spend to Save

I have based Spend to Save operating expenditure on my assessment of the requirements for Spend to Save. I have split this between operating expenditure and capital expenditure in the proportion which I expect the authorities to use this budget (see Chapter 21). The profile of assumed Spend to Save can be seen in Table 30.13.

Level of service increment

Level of service increment represents the additional new operating expenditure that I will allow the authorities to spend on improving their level of service (see Chapter 18). The assumed level of expenditure can be seen in Table 30.14.

Table 30.15: Assumed net profit from new business

New business net profit	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
	£0.0m	£0.0m	£0.0m	£0.1m	£0.1m	£0.2m	£0.2m	£0.2m	£0.2m

Table 30.16: Scottish Executive resource accounting baseline budget

Baseline budget	2001-02	2002-03	2003-04	2004-05	2005-06
	£112.1m	£116.6m	£111.1m	£111.1m	£111.1m

Table 30.17: Scottish Executive resource accounting alternative baseline budget

Baseline budget	2001-02	2002-03	2003-04	2004-05	2005-06
	£112.1m	£136.6m	£118.8m	£145.2m	£133.0m

ii) New business net profit

I have assumed the net profit from activities in the financial model set out in Table 30.15. I have estimated this profit from information received from the water authorities on spending to date and on research on new business activity in England and Wales (see Chapter 27).

iii) Baseline Budget under resource accounting and budgeting

The Scottish Executive has set the resource accounting baseline budget to which North of Scotland Water Authority must adhere. These limits are set as shown in Table 30.16.

The assumptions have also been used with an alternative baseline budget. The new phasing gives a more equitable price profile across all three authorities. These limits are set as shown in Table 30.17.

Section 7: Chapter 31

Assessment of Revenue Cap: Financial Assumptions – West of Scotland Water Authority

This chapter outlines the assumptions that I have used in my financial model for West of Scotland Water Authority. This chapter should be read in conjunction with Chapter 10, which describes the functionality of the financial model. The assumptions in this chapter result in the revenue caps for West of Scotland Water Authority outlined in Chapter 40.

My assumptions include the appropriate inflation index.

a) Balance sheet

i) Assets and depreciation

Capital expenditure

I have re-profiled, in consultation with industry management, the original water authority submissions to the Quality and Standards process. My phased profile of the investment programme is shown in Table 31.1 below. This investment is split between infrastructure, 'quality' and the capital element of the proposed Spend to Save expenditure (see Chapters 15, 19 and 21).

I have divided the 'quality' additions to the asset base by their expected useful life. My assumptions are set out in Table 31.2. Infrastructure investment is expensed in the year of purchase through the profit and loss account. I have assumed that the Spend to Save capital expenditure allocation relates to IT and is therefore depreciated over three years.

Depreciation

I have applied a full annual depreciation charge to an asset purchased during the year. The rates of depreciation directly reflect the asset useful lives and are as shown in Table 31.3.

Table 31.1: Investment programme profile

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total infrastructure spend	£42.5m	£30.6m	£34.2m	£81.2m	£89.1m	£87.5m	£88.8m	£90.1m	£91.5m
Total quality spend	£138.9m	£169.8m	£186.0m	£218.8m	£218.9m	£131.2m	£133.2m	£135.2m	£137.2m
Spend to Save capital expenditure	£0.0m	£6.9m	£16.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 31.2: Assumptions on useful asset life of asset additions

	2001-2002 onwards
1 year	0.0%
3 years	17.0%
4 years	1.0%
5 years	2.0%
6 years	2.0%
7 years	0.0%
10 years	7.0%
15 years	0.0%
20 years	20.0%
25 years	15.0%
30 years	0.0%
40 years	5.0%
60 years	18.0%
80 years	0.0%
100 years	0.0%
Infinite	13.0%

Table 31.3: Depreciation rates derived from assumed asset life

	2001-02 onwards
1 year	100.0%
3 years	33.3%
4 years	25.0%
5 years	20.0%
6 years	16.7%
7 years	14.3%
10 years	10.0%
15 years	6.7%
20 years	5.0%
25 years	4.0%
30 years	3.3%
40 years	2.5%
60 years	1.7%
80 years	1.3%
100 years	1.0%
Infinite	0.0%

Modified historic cost revaluation

I have made cumulative modified historic cost adjustments to asset cost and to accumulated depreciation from the start of the 2001-02 financial year. From the current year onward, I have made annual adjustments to incorporate annual capital expenditure inflation.

Asset disposals

I have assumed that assets are sold with no residual value at the end of their useful lives. Any proceeds from the sale of asset disposals are therefore assumed to generate a profit on disposal equal to the selling price. My expectation of the proceeds from disposals (and hence my expectation of profit on disposal) are as shown in Table 31.4.

ii) Capital expenditure efficiency

I have applied my efficiency targets to the capital expenditure figures detailed above. I have excluded Spend to Save capital expenditure. I have split the assumptions for capital expenditure efficiency targets between my efficiency target on actual physical capital expenditure and my separate targeted efficiency on capitalised labour (see Chapter 19). The capital expenditure efficiency targets are shown in Table 31.5.

Table 31.4: Assumed proceeds from asset disposals

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Asset disposal proceeds	£0.0m	£1.5m	£1.6m	£1.6m	£1.7m	£0.0m	£0.0m	£0.0m	£0.0m

Table 31.5: Capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Capital expenditure efficiency	0.0%	18.0%	24.0%	28.0%	34.0%	35.4%	36.8%	38.2%	39.8%
Capitalised labour efficiency	0.0%	18.0%	24.0%	29.0%	33.3%	37.1%	38.6%	40.2%	41.8%

Table 31.6: Assumed achievement of capital expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06
Achievement of efficiency target (capital expenditure efficiency)	100%	100%	79.7%	72.8%	62.5%
Achievement of efficiency target (capitalised labour)	100%	100%	78.0%	68.9%	62.5%

The targets for the proposed Scottish Water are set so as to close 80% of the efficiency gap between the privatised water and sewerage companies of England and Wales and the three water authorities in Scotland. I have assumed that should West of Scotland Water Authority remain a separate organisation it would achieve the proportion of the annual efficiency targets outlined in Table 31.6 below.

iii) Other assets and liabilities

I have calculated other asset and liability categories as a percentage of revenue in the year. The percentages used are in line with the results of historic data (1996-97 to 1999-2000). I have made no allowance for provisions since these costs are expected to be incorporated into Spend to Save operating expenditure. My assumptions are shown in Table 31.7.

Table 31.7: Assumptions on other assets and liabilities

	2001-02 onwards
Stocks	0.9%
Debtors	19.0%
Cash	0.0%
Current liabilities	-25.0%
Creditors > 1 year	-2.0%
Provisions	£0.0m

iv) Government and other loans

I have taken the historical loan balances from the note in the 1999-2000 financial statements concerning loan maturities by interest rate. I have assumed the repayment of these loans at their expected maturity. I have applied the appropriate weighted average cost of debt to reflect the total debt outstanding at each particular interest rate. These loan balances are shown in Table 31.8.

All new loan balances result from the net inflow/(outflow) from the cash flow statement. I have taken these to be long-term loans and they therefore do not fall due within the period of the model. I have assumed that the authorities would choose long-term loans due to the existence of a downward sloping yield curve (see Chapter 16). I have used my estimate of the long-term cost of debt for all new loans. The existing loan base is shown in Table 31.8.

b) Income and expenditure account

I have assumed that the chargeable base for domestic customers will grow in line with the housing market. I have used information available from Scottish Housing. I have assumed that annual growth in the housing stock will average 0.7%. This allows for demolition and for subdivision of existing properties.

I have not assumed any change in chargeable base for customers receiving secondary services. I have assumed a 15% annual increase in the trade effluent chargeable base.

Table 31.9: Assumed rate of annual change in chargeable base by customer category

	2001-02	2002-03 onwards
Domestic customers	100.0%	100.7%
Other non-domestic	100.0%	100%
Large user	79.0%	100%
Trade Effluent	79.0%	115%
Secondary	100.0%	100%

My assumptions for the chargeable base by customer category are as shown in Table 31.9.

i) Revenue and capital grants

I have not included any revenue or capital grants since I do not expect these to be material.

Operating expenditure

I have taken controllable base operating cost from the 2000-01 annual accounts of the three authorities. I have adjusted operating costs for any inter-authority trading. This operating cost allowance increases in line with inflation. I have set the level of operating expenditure efficiency in line with my targets (see Chapter 18). The levels of base controllable operating expenditure and operating efficiency are detailed in Table 31.10.

Table 31.8: Existing loan base by interest rate and date of maturity

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
4.5%	£0m	£0m	£0m	£8,750m	£8,750m	£8,750m	£8,750m	£6,136m	£6,136m
5.5%	£0m	£0m	£0m	£1,250m	£1,250m	£1,250m	£1,250m	£2,368m	£2,368m
6.5%	£1,024m	£759m	£759m	£0m	£1m	£2m	£3m	£3,518m	£3,518m
7.5%	£616m	£6,982m	£6,982m	£8,127m	£8,127m	£8,127m	£8,127m	£7,955m	£7,955m
8.5%	£1,232m	£10,481m	£10,481m	£3,942m	£3,942m	£3,942m	£3,942m	£537m	£537m
9.5%	£390m	£5,161m	£5,161m	£5,654m	£5,654m	£5,654m	£5,654m	£1,042m	£1,042m
10.5%	£157m	£2,322m	£2,322m	£5,158m	£5,158m	£5,158m	£5,158m	£923m	£923m
11.5%	£0m	£139m	£139m	£3,650m	£3,650m	£3,650m	£3,650m	£41m	£41m
12.5%	£0m	£3m	£3m	£0m	£1m	£2m	£3m	£0m	£0m
13.5%	£0m	£0m	£0m	£181m	£181m	£181m	£181m	£0m	£0m
14.5%	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m	£0m
TOTAL	£3,419m	£25,847m	£25,847m	£36,712m	£36,714m	£36,716m	£36,718m	£22,520m	£22,520m

Table 31.10: Operating expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Controllable base operating expenditure	£168.3m	£146.2m	£145.4m	£146.7m	£148.0m	£148.7m	£149.4m	£150.1m	£151.0m
Operating expenditure efficiency	4.8%	19.3%	29.0%	33.8%	38.7%	41.1%	43.5%	45.7%	47.9%

Table 31.11: Assumed achievement of operating expenditure efficiency targets

	2001-02	2002-03	2003-04	2004-05	2005-06
Achievement of efficiency target	100%	100%	75.0%	67.9%	62.5%

Table 31.12: Assumed Public Private Partnership (PPP) charges

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
PPP charges	£11.0m	£34.3m	£35.3m	£35.1m	£36.8m	£37.7m	£38.7m	£39.6m	£40.6m

Table 31.13: Assumed profile of Spend to Save operating expenditure

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Spend to Save operating expenditure	£0.0m	£18.3m	£38.9m	£11.5m	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m

Table 31.14: Assumed level of service operating expenditure

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Level of service increment	£0.0m	£0.8m	£1.6m	£2.4m	£3.3m	£5.8m	£7.1m	£8.5m	£10.0m

The operating efficiency targets for West of Scotland Water Authority are set at a percentage of the targets set for Scotland. The targets for Scotland are based on achieving 80% of the efficiency gap between England and Wales and Scotland. The phasing of efficiencies for West of Scotland Water Authority under Scottish Water ensures that the 80% gap is achieved by 2005-06. The proportion of these targets achieved should West of Scotland Water Authority remain a separate authority is shown in Table 31.11.

Public Private Partnership (PPP) charges

I have used the water authority estimates of PPP charges. My source is the Strategic Business Plans submitted by the authorities. I have combined their estimates to calculate the position for Scotland. PPP costs within the Strategic Business Plans are fixed by contract. I therefore do not expect the

estimates to change materially. The assumed charges are shown in Table 31.12.

Spend to Save

I have based Spend to Save operating expenditure on my assessment of the requirements for Spend to Save. I have split this between operating expenditure and capital expenditure in the proportion which I expect the authorities to use this budget (see Chapter 18). The profile of assumed Spend to Save can be seen in Table 31.13.

Level of service increment

Level of service increment represents the additional new operating expenditure that I will allow the authorities to spend on improving their level of service (see Chapter 18). The assumed level of expenditure can be seen in Table 31.14.

Table 31.15: Assumed net profit from new business

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
New business net profit	£0.1m	£0.4m	£0.6m	£0.9m	£1.2m	£1.2m	£1.2m	£1.3m	£1.3m

Table 31.16: Scottish Executive resource accounting baseline budget

	2001-02	2002-03	2003-04	2004-05	2005-06
Baseline budget	£106.4m	£110.6m	£105.5m	£105.5m	£105.5m

Table 31.17: Scottish Executive resource accounting alternative baseline budget

	2001-02	2002-03	2003-04	2004-05	2005-06
Baseline budget	£106.4m	£100.6m	£105.5m	£114.5m	£116.9m

ii) New business net profit

I have assumed the net profit from activities in the financial model set out in Table 31.15. I have estimated this profit from information received from the water authorities on spending to date and on research on new business activity in England and Wales (see Chapter 27).

iii) Baseline Budget under resource accounting and budgeting

The Scottish Executive has set the resource accounting baseline budget to which West of Scotland Water Authority must adhere. These limits are set as shown in Table 31.16.

The assumptions have also been used with an alternative baseline budget. The new phasing gives a more equitable price profile across all three authorities. These limits are set as shown in Table 31.17.

Section 7: Chapter 32

Assessment of Revenue Cap: Scottish Water – Financial Results

This chapter describes the principal results of my financial model. It summarises the costs and required revenue of the proposed Scottish Water in each year of the current regulatory period (i.e. 2001-02 to 2005-06). I also outline the extent of the industry's need for public expenditure during the next four years. This requirement is within the public expenditure limits set out in the letter from the Minister that commissioned this Review. The next chapter provides a summary of the formal risk analysis to these financial results, which was also requested in the commissioning letter.

a) Financial summary

My aim is to keep the revenue that is raised from customers to the lowest possible level, whilst allowing a financially and environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total is still lower than it is in England and Wales. The increased share of domestic revenue does, however, improve the predictability of the proposed Scottish Water's revenues.

Table 32.1: Indicative revenue breakdown

Revenue split by customer type	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£495.0m	£534.4m	£578.0m	£606.2m	£610.4m
% change on previous year	18.2%	8.0%	8.2%	4.9%	0.7%
Non-domestic revenue	£248.2m	£266.1m	£285.8m	£296.4m	£281.6m
% change on previous year	7.4%	7.2%	7.4%	3.7%	(5.0%)
Large user revenue	£41.9m	£41.9m	£41.9m	£41.9m	£35.9m
% change on previous year	(23.0%)	0.0%	0.0%	0.0%	(14.2%)
Trade effluent revenue	£16.7m	£19.2m	£22.1m	£25.4m	£29.3m
% change on previous year	(12.9%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£31.6m	£33.9m	£36.4m	£37.7m	£37.7m
% change on previous year	5.3%	7.2%	7.4%	3.7%	0.0%
Total revenue	£833.4m	£895.4m	£964.1m	£1,007.6m	£994.9m
% change on previous year	10.6%	7.4%	7.7%	4.5%	(1.3%)
Inter-authority revenue	(£7.6m)	(£7.8m)	(£8.0m)	(£8.2m)	(£8.4m)
Net profit from non core business activities	£0.1m	£0.5m	£1.1m	£1.4m	£1.8m
Revenue (excluding inter-authority)	£825.9m	£888.2m	£957.2m	£1,000.9m	£988.3m
% change on previous year	n/a	7.5%	7.8%	4.6%	(1.3%)
Domestic revenue as % of total	59.9%	60.2%	60.4%	60.6%	61.8%
Non-domestic revenue as % of total	40.1%	39.8%	39.6%	39.4%	38.2%

Table 32.2: Operating costs summary

	2001-02	2002-03	2003-04	2004-05	2005-06
Base operating costs:					
Base	£375.5m	£384.8m	£394.5m	£404.3m	£414.4m
New	£0.4m	£2.5m	£4.6m	£6.8m	£9.0m
Efficiency target	(£15.4m)	(£63.0m)	(£96.9m)	(£115.9m)	(£135.8m)
Total	£360.5m	£324.3m	£302.1m	£295.2m	£287.7m
Spend to Save	£0.0m	£40.0m	£85.0m	£25.0m	£0.0m
Operating costs					
PPP costs	£57.0m	£111.6m	£116.7m	£118.8m	£122.7m
Merger savings	£0.0m	(£20.0m)	(£25.0m)	(£29.3m)	(£29.3m)
Depreciation Charge:					
Non-infrastructure assets charge	£110.7m	£133.5m	£161.7m	£173.3m	£173.8m
Infrastructure Charge	£149.7m	£127.0m	£123.3m	£183.5m	£190.9m
Total	£260.4m	£260.5m	£285.0m	£356.8m	£364.7m
Inter-authority costs	(£5.2m)	(£5.3m)	(£5.4m)	(£5.6m)	(£5.7m)
Total operating cost	£672.7m	£711.0m	£758.3m	£760.8m	£740.1m

My recommended overall revenue cap is indicated in Table 32.1. This table also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 54% of total operating cost. The share of base operating cost increases to 87% of the total if I exclude depreciation. PPP costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

I expect the proposed Scottish Water to achieve my targets and this will result in base operating cost falling to 38% of total operating cost. Base operating cost will account for 74% of the total, excluding depreciation. Table 32.2 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 8% of total operating costs in 2001-02. This increases to 17% by 2005-06. I have not set the proposed Scottish Water an efficiency target for its PPP contracts; however, the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for the proposed Scottish Water. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts on the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 28. This also increases the total depreciation charge. I believe that the depreciation charge, that I have estimated is more in line

with the actual expected life of the assets of the proposed Scottish Water. The costs are summarised in Table 32.2.

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure that relates to environmental or public health compliance. My capital efficiency targets, shown in Table 32.3, reduce the actual burden on customers considerably.

Table 32.4 details the cash flow of the proposed Scottish Water. In 2002-03, customer revenue funds 86% of the total

expenditure of Scottish Water. Scottish Water increases its outstanding debt by a further £150.2 million to cover the cash outflow in the first year of the Review period.

By 2005-06, revenue from customers is sufficient to fund all the expenditure of the proposed Scottish Water and to make a small repayment of debt. Scottish Water will, however, still have increased its total debt by nearly £300 million over the four years of this regulatory period. This will position the authority well for the future, since it is important to retain financial flexibility and the ability to borrow.

This will certainly improve the outlook for customer prices if there is a need to invest to meet a new environmental deadline

Table 32.3: Capital investment

Capital investment:	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£358.5m	£409.1m	£413.3m	£482.0m	£456.3m
Infrastructure	£106.4m	£97.4m	£100.0m	£187.6m	£213.7m
Efficiency target	£0.0m	(£70.8m)	(£102.1m)	(£169.1m)	(£207.0m)
Total	£464.9m	£435.7m	£411.1m	£500.5m	£463.0m
Spend to Save	£0.0m	£15.0m	£35.0m	£0.0m	£0.0m
Total capital investment	£464.9m	£450.7m	£446.1m	£500.5m	£463.0m

Table 32.4: Summary of cash flow movements

Cash outgoings:	2001-02	2002-03	2003-04	2004-05	2005-06
Operating expenditures	£412.4m	£450.5m	£473.4m	£404.1m	£375.4m
Interest charge	£142.7m	£150.6m	£153.8m	£154.9m	£152.9m
Investment	£464.9m	£450.7m	£446.1m	£500.5m	£463.0m
Proceeds from disposals	£0.0m	(£8.4m)	(£8.8m)	(£9.2m)	(£9.7m)
Working capital	£44.4m	(£5.0m)	(£4.9m)	(£3.1m)	£0.9m
Total outgoings	£1,064.4m	£1,038.4m	£1,059.6m	£1,047.2m	£982.5m
Funded by:					
Revenue	£825.9m	£888.2m	£957.2m	£1,000.9m	£988.3m
New debt	£238.4m	£150.2m	£102.4m	£46.4m	(£5.7m)
Total funding	£1,064.4m	£1,038.4m	£1,059.6m	£1,047.2m	£982.5m

Table 32.5: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£142.7m	£150.6m	£153.8m	£154.9m	£152.9m
Revenue	£825.9m	£888.2m	£957.2m	£1,000.9m	£988.3m
Debt interest as a percentage of revenue	17.3%	17.0%	16.1%	15.5%	15.5%

Table 32.6: Resource accounting analysis

	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£153.2m	£185.5m	£207.7m	£249.2m	£257.9m
Total capital investment spend	£464.9m	£450.7m	£446.1m	£500.5m	£463.0m
Total depreciation and IRE charged to the income and expenditure account	£260.4m	£260.5m	£285.0m	£356.8m	£364.7m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£11.3m	£21.1m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£311.7m	£265.1m	£238.4m	£262.6m	£226.2m
Baseline budget allowed under resource accounting	£302.3m	£314.3m	£299.7m	£299.7m	£299.7m
Variance to baseline	(£9.4m)	£49.2m	£61.3m	£37.1m	£73.5m

or to respond to an operational problem. This flexibility can also be important in ensuring that there is no question of Scottish Water choosing a PPP project because of constraints on its ability to borrow. The proportion of customers bills, that goes towards paying interest will also begin to fall during this period as can be seen in Table 32.5.

Table 32.6 summarises the resource accounting budget for the proposed Scottish Water.

The baseline budget is the public expenditure available to Scottish Water. I have taken this budget from the Minister's commissioning letter. Scottish Water's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal

to) the baseline budget contained in the commissioning letter. This is a binding constraint. My revenue caps are sufficient to ensure that Scottish Water can meet the public expenditure constraints. I have assessed my recommended revenue gaps to try to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

The level of interest is growing less quickly than revenue towards the end of the Review period. This is demonstrated by the ratio '% change in level of interest/ % change in level of revenue' in Table 32.7, where the ratio is greater than (or equal to) one. The free cash flow increases throughout the period and is sufficient in 2005-06 to reduce the actual outstanding debt. The surplus in 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach

Table 32.7: Financial indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.7%	6.6%	6.4%	6.3%	6.3%
% change in level of interest/ % change in level of revenue	n/a	0.7	0.3	0.2	1.0
Free cash flow	(£95.7m)	£0.3m	£51.4m	£108.6m	£158.7m
Surplus/(deficit) of Spend to Save to operating expenditure efficiency targets	(£15.4m)	(£8.0m)	£23.1m	(£90.9m)	(£135.8m)

Table 32.8: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	(0.7)	0.0	0.3	0.7	1.0
% total base operating cost to revenue	43.7%	36.5%	31.6%	29.5%	29.2%
Return on current cost assets (after exceptional items)	7.0%	7.3%	7.6%	8.5%	8.4%
Average 25 depreciation life (years)	25	23	21	21	22

I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be at around 1.5, as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. Good progress towards this target is made during this regulatory period. In the future I would plan to keep this ratio at around 1.5, and this should ensure that we can keep customer charge increases to the absolute minimum.

The return on average current cost net assets exceeds the targeted rate of 6% in each year of the Review period and the cumulative rate of return exceeds 6.5% in each year.

The depreciation lives of non-infrastructure assets are set at a prudent level, resulting in an overall useful life of between 21 and 25 years.

Section 7: Chapter 33

Assessment of Revenue Cap: Risk Analysis – Proposed Scottish Water

a) Background

In the letter that commissioned this Review the Minister asked me to carry out a formal risk analysis. My analysis focuses on the likelihood of the proposed Scottish Water failing to comply with the resource accounting budget (the public expenditure constraint) allowed by the Scottish Executive. This risk analysis is important because it provides a higher level of confidence in the projections than a simple sensitivity analysis. This analysis allows me to take account of all of the major risk factors at the same time.

In particular, I examine how under- or out-performance of my efficiency targets for operating and capital expenditure might affect compliance with budgets. I quantify the chances that the proposed Scottish Water will not exceed the public expenditure constraint set in the commissioning letter. I could quantify the risk to customers' bills or delays to the investment programme in the same way, but these are effectively different manifestations of the same risk - the risk that the public expenditure constraint is breached. My analysis, therefore, attempts to determine, as objectively as possible, the degree of this risk.

In carrying out my Review, I have made many assumptions, and these have been discussed in previous chapters. The most material of these, in terms of their impact on the financial results, are the efficiency targets. My assumptions on depreciation, inflation and potential merger savings are also material, but of a lower order, and have therefore not been analysed in as much detail. My assumption on depreciation does potentially impact on the performance of Scottish Water in relation to its resource budget, but it is wholly controllable. It is therefore a risk that the management and board of Scottish Water could control.

My assumption of capital expenditure inflation is lower than the retail price index (RPI). The impact of capital expenditure inflation increasing to RPI is approximately £25 million by the final year of the regulatory period. This is significant, but is not material relative to the other risks. I believe that this inflation rate in Scotland is likely to continue to run below the UK average and that my estimate is therefore likely to be broadly correct. I believe that the conservative assumptions made in assessing the efficiency targets are likely to lead to a far greater variability

in outcome. Ten percent of the efficiency targets is nearly double the total inflation rate risk.

I have identified three mutually exclusive scenarios for the proposed Scottish Water's progress towards meeting my efficiency targets for operating and capital expenditure.

The success of Scottish Water will depend upon a considerable cultural change in the organisation. The organisation must understand that it operates in a commercial and competitive world and must identify and influence those factors that will determine its ultimate success. This will include issues of governance and incentives. It will also be essential that the management have key performance indicators that reflect the principal drivers of the business. Scottish Water will also have to be fully accountable to its customers and to set tariffs that are broadly reflective of the costs incurred.

These issues are discussed in more detail in Chapters 11 and 26.

i) Scenario A

In this scenario, I have assumed that the degree of efficiency achieved is unpredictable, and that a wide range of outcomes could occur. This happens because the key success factors noted above are not fully addressed. I believe that it is unlikely under this scenario that the proposed targets would be approached, and there is a slight possibility that the recent decline in performance could continue. Broadly, I would expect the authority to make more progress against the capital efficiency target than the operating efficiency target. I believe that the target for operating cost is more dependent on the successful transformation of the organisation.

ii) Scenario B

I have assumed in this scenario that the proposed Scottish Water has addressed the key management issues outlined above. I have also assumed that this is done quickly and is a direct result of the creation of Scottish Water from the three existing authorities.

Under this scenario, the likely closure of the efficiency gap is much more predictable. I believe that given the conservative assessment of the targets, the management should be able to achieve the targets with a margin to spare and that significant

under- or out-performance of the targets is unlikely. My analysis has shown that the water and sewerage companies in England and Wales have a very consistent record of performance. I cannot see any reason why this should not be repeated in Scotland.

The worst case in this scenario is broadly similar to the level of efficiency of Welsh Water at the 1999 Periodic Review. The best case is broadly equivalent to the achievement of the leading company in England and Wales by 1998-99. I have discussed in more detail the performance of the companies in improving their efficiency in Chapters 18 and 19. The management of Scottish Water has a significant advantage in that it can learn from the experience of the privatised companies.

iii) Scenario C

In this scenario, the proposed Scottish Water has again addressed the key management issues outlined above. I have also assumed that this is done quickly and is a direct result of the creation of Scottish Water from the three existing authorities.

Scenario C differs from Scenario B in that Scottish Water would show a commitment to market testing each major area of cost, either on a local or a more global basis. This does not mean that the organisation inevitably opts to contract out its activities. It simply means that it can be confident on an on-going basis that it is delivering each activity as cost effectively as possible. As an example, Wessex Water has successfully achieved a very high degree of efficiency by encouraging a partnership approach between management and workers. Welsh Water has achieved a similar effect by contracting out its operations. The successful solution for Scottish Water will take into full account the expectations of customers, the workers, managers and the unions.

In my view, this scenario is capable of providing efficiencies that are at the leading edge for the UK. The attractiveness of the Scottish market to potential contractors could well encourage very competitive pricing of any contracts. Even in the worst case, this scenario is very unlikely to fail to deliver the proposed efficiency target, because this would imply that market prices for activities would be well above the norm in England and Wales. There is no empirical evidence to support this.

I regard Scenarios A, B and C as being mutually exclusive, because I believe that the creation of Scottish Water can be a catalyst for change. The extent of that change could be marginal (Scenario A), significant (Scenario B) or leading edge (Scenario C). I do not believe that it is realistic to assume that the organisational change required to deliver the capital efficiency target is achieved, but that it is not achieved for the operating cost target. It also does not seem likely that, beyond the variations of the range of outcomes, these organisational issues can be partially addressed. This means that each scenario produces results that are distinct and different from one another.

In each of these scenarios, I find no compelling reason to suppose that the risk profiles should be skewed either way. I believe, therefore, that a Normal distribution seems most appropriate. I have quantified the risk profiles for each of these scenarios, as shown in Table 33.1:

Table 33.1: Assumed mean and standard deviation of risk profiles for operating and capital efficiencies

	Profile A	Profile B	Profile C
Distribution	Normal	Normal	Normal
Mean closure of efficiency gap (%)	Operating expenditure: 20 Capital expenditure: 40	85 (operating & capital expenditure)	105 (operating & capital expenditure)
Standard deviation	20	7.5	5

These profiles are illustrated in Figures 33.1 and 33.2.

Figure 33.1: Risk profiles for operating expenditure

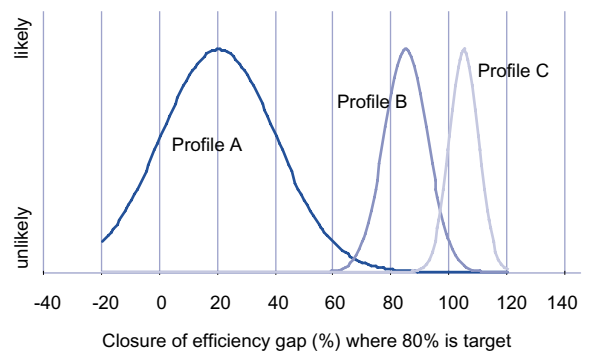
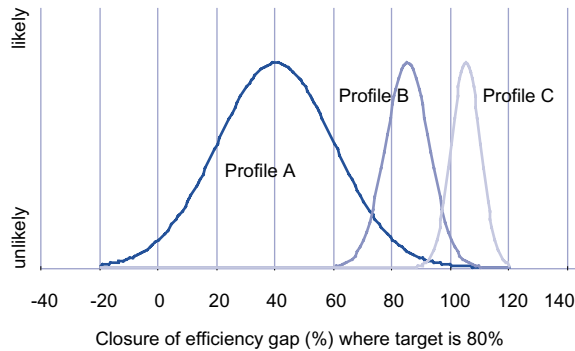


Figure 33.2: Risk profiles for capital expenditure



My assumptions about the scenarios, and their risk profiles, cover a very wide range of possible outcomes. This is clearly demonstrated in the figures. I am therefore confident that I have covered the plausible scope for uncertainty in my Review.

Table 33.2: Profile combinations considered in the risk analysis

Risks considered	Dependency
Operating cost Scenario A only	Assumes no risk in achieving the target for capital expenditure
Operating cost Scenario B only	Assumes no risk in achieving the target for capital expenditure
Operating cost Scenario C only	Assumes no risk in achieving the target for capital expenditure
Capital expenditure Scenario A only	Assumes no risk in achieving the target for operating cost
Capital expenditure Scenario B only	Assumes no risk in achieving the target for operating cost
Capital expenditure Scenario C only	Assumes no risk in achieving the target for operating cost
Operating cost and capital expenditure Scenario A	Dependent
Operating cost and capital expenditure Scenario A	Independent
Operating cost and capital expenditure Scenario B	Dependent
Operating cost and capital expenditure Scenario B	Independent
Operating cost and capital expenditure Scenario C	Dependent
Operating cost and capital expenditure Scenario C	Independent

b) Analysis

I have used the profiles described above in a standard risk analysis software package. I assessed the profile combinations set out in Table 33.2.

I have not combined different scenarios in my analysis. As explained above, I do not believe that combinations of scenario are likely to reflect a possible actual outcome.

The choice of dependent and independent profiles reflects whether the risk of under- or out-performance against targeted operating cost efficiency and capital expenditure efficiency has a common cause (dependent), or alternatively that these two factors are independent. In my view, the degree of dependence is least for Scenario A, and greatest for Scenario C. I have, however, looked at both assumptions.

My risk analysis also examines the potential effect on compliance with public expenditure budgets of delays in addressing the efficiency targets.

c) Results

I have calculated the risk that the proposed Scottish Water exceeds its public expenditure constraint in each year of the review period. I have assessed this risk under each scenario.

The most likely outcome is the 50% probability point. I show the corresponding level of public expenditure and compare it to the public expenditure constraint. A negative number means that the constraint is exceeded.

The best outcome is the lower 5% probability point. I show the corresponding level of public expenditure and compare it to the public expenditure constraint.

The worst outcome is the higher 5% probability point. I show the corresponding level of public expenditure and compare it to the public expenditure constraint.

The results are shown in Table 33.3.

Table 33.3: Summary of risk analysis on public expenditure budget for Scottish Water

RISK PROFILE	5% chance that public expenditure exceeds:	Margin	Most likely outcome	Margin	5% chance that public expenditure is below :	Margin	% chance of exceeding public expenditure constraint
OPERATING COST EFFICIENCY TARGET ONLY							
Profile A							
2002–03	£385m	(£71m)	£359m	(£45m)	£333m	(£19m)	99.8%
2003–04	£422m	(£122m)	£382m	(£82m)	£341m	(£42m)	>99.9%
2004–05	£521m	(£222m)	£473m	(£174m)	£425m	(£125m)	>99.9%
2005–06	£541m	(£242m)	£485m	(£185m)	£429m	(£129m)	>99.9%
Profile B							
2002–03	£267m	£47m	£257m	£57m	£247m	£67m	<0.1%
2003–04	£243m	£57m	£227m	£73m	£211m	£88m	<0.1%
2004–05	£264m	£36m	£245m	£55m	£226m	£73m	<0.1%
2005–06	£226m	£74m	£204m	£96m	£182m	£118m	<0.1%
Profile C							
2002–03	£224m	£90m	£218m	£97m	£211m	£103m	<0.1%
2003–04	£177m	£123m	£167m	£133m	£156m	£143m	<0.1%
2004–05	£163m	£136m	£152m	£148m	£140m	£160m	<0.1%
2005–06	£101m	£199m	£87m	£213m	£73m	£227m	<0.1%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile A							
2002–03	£388m	(£74m)	£359m	(£45m)	£330m	(£16m)	99.5%
2003–04	£423m	(£124m)	£382m	(£82m)	£340m	(£40m)	>99.9%
2004–05	£542m	(£243m)	£473m	(£173m)	£404m	(£104m)	>99.9%
2005–06	£570m	(£270m)	£485m	(£185m)	£400m	(£101m)	>99.9%
Profile B							
2002–03	£268m	£46m	£257m	£57m	£246m	£69m	<0.1%
2003–04	£243m	£56m	£227m	£73m	£211m	£89m	<0.1%
2004–05	£272m	£28m	£245m	£55m	£218m	£82m	<0.1%
2005–06	£237m	£63m	£204m	£96m	£171m	£129m	<0.1%
Profile C							
2002–03	£225m	£90m	£218m	£97m	£210m	£104m	<0.1%
2003–04	£177m	£123m	£167m	£133m	£156m	£144m	<0.1%
2004–05	£168m	£131m	£152m	£148m	£134m	£165m	<0.1%
2005–06	£108m	£192m	£87m	£213m	£66m	£234m	<0.1%
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Dependent							
Profile A							
2002–03	£416m	(£102m)	£359m	(£45m)	£302m	£12m	90%
2003–04	£466m	(£166m)	£382m	(£82m)	£297m	£2m	95%
2004–05	£594m	(£294m)	£473m	(£173m)	£353m	(£53m)	99%
2005–06	£630m	(£330m)	£485m	(£185m)	£340m	(£40m)	98%
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Independent							
Profile A							
2002–03	£398m	(£84m)	£359m	(£45m)	£320m	(£6m)	97%
2003–04	£439m	(£140m)	£382m	(£82m)	£324m	(£24m)	99%
2004–05	£556m	(£256m)	£473m	(£173m)	£390m	(£91m)	>99.9%
2005–06	£585m	(£285m)	£485m	(£185m)	£385m	(£86m)	99.9%

RISK PROFILE	5% chance that public expenditure exceeds:	Margin	Most likely outcome	Margin	5% chance that public expenditure is below :	Margin	% chance of exceeding public expenditure constraint
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Dependent							
Profile B							
2002-03	£279m	£36m	£257m	£57m	£236m	£79m	<0.1%
2003-04	£259m	£41m	£227m	£73m	£195m	£105m	<0.1%
2004-05	£291m	£9m	£245m	£55m	£199m	£100m	2%
2005-06	£259m	£41m	£204m	£96m	£149m	£151m	0.2%
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Independent							
Profile B							
2002-03	£272m	£42m	£257m	£57m	£242m	£72m	<0.1%
2003-04	£249m	£51m	£227m	£73m	£205m	£95m	<0.1%
2004-05	£277m	£23m	£245m	£55m	£213m	£87m	0.2%
2005-06	£243m	£57m	£204m	£96m	£165m	£134m	<0.1%
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Dependent							
Profile C							
2002-03	£231m	£83m	£218m	£97m	£204m	£110m	<0.1%
2003-04	£186m	£113m	£167m	£133m	£147m	£153m	<0.1%
2004-05	£180m	£120m	£152m	£148m	£123m	£177m	<0.1%
2005-06	£121m	£178m	£87m	£213m	£53m	£247m	<0.1%
OPERATING COST & CAPITAL EXPENDITURE EFFICIENCY TARGET							
Independent							
Profile C							
2002-03	£228m	£87m	£218m	£97m	£208m	£107m	<0.1%
2003-04	£181m	£118m	£167m	£133m	£152m	£148m	<0.1%
2004-05	£173m	£127m	£152m	£148m	£130m	£170m	<0.1%
2005-06	£113m	£187m	£87m	£213m	£61m	£239m	<0.1%

Notes: Public expenditure outcomes that exceed budget are shown in bold type. Risks greater than 1% and less than 99% are rounded to the nearest percent.

The results show clearly the importance of a concerted effort by the management of Scottish Water to develop a more commercial organisation. In Scenario A there is a very high chance that the public expenditure constraint could be breached. This likelihood is greater than 99% in 2004-05 under either the dependent or independent outcomes for capital and operating cost efficiencies. There is a 5% chance that the shortfall could exceed £330 million in 2005-06.

I believe that it is reasonable and prudent to assume Scenario B. In this case, the range of possible outcomes is considerably more encouraging. The risk that the public expenditure constraint is exceeded is estimated at 2% in 2004-05 and is

negligible for the other years in this Review period. There is a 5% chance that the difference between the outcome and the constraint is under £9 million in 2004-05, but the difference, at this level of risk, is more than £30 million for each of the other years.

The Scenario C results are excellent. The chances of exceeding the public expenditure constraint in each year are negligible, at less than 0.1% for all cases.

The analysis above has dealt with risks concerning the extent to which the proposed Scottish Water meets efficiency targets. There are also risks in relation to the speed with which targets are addressed. I have examined the potential impact on compliance with public expenditure budgets of a delay in the achievement of my targets. The results show that it is imperative for Scottish Water to give utmost priority to achieving the

efficiency targets. A delay of one year would result in a budget shortfall of almost £90 million in 2002-03. In the event of a two-year delay, the budget shortfall would be over £150 million in 2003-04. Table 33.4 compares the expected margin on the public expenditure budget arising from such delays.

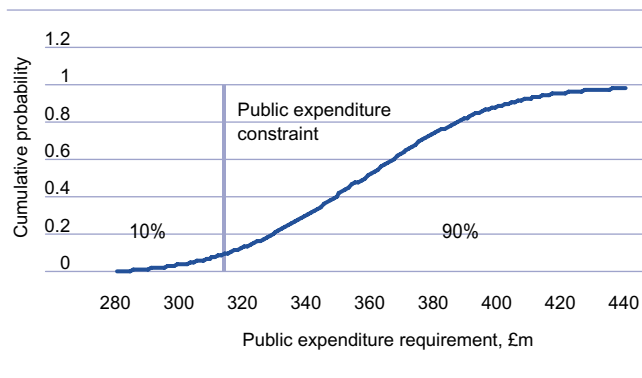
Table 33.4: Effect of delay in efficiency savings on expected margin on public expenditure budget

	2002-03	2003-04	2004-05	2005-06
Targets met on time	£49.2m	£61.3m	£37.1m	£73.5m
Targets delayed by one year	(£87.8m)	(£17.0m)	(£30.3m)	(£6.7m)
Targets delayed by two years	(£103.6m)	(£154.4m)	(£126.8m)	(£78.8m)

In Appendix D I provide details of my risk analysis. The examples that follow demonstrate some of the key results of the detailed analysis. Figures 33.3 to 33.8 highlight the following:

- The cumulative risk profile against the public expenditure constraint for a selected year for each scenario. I have combined the operating cost and capital expenditure efficiency target and assumed that they are dependent.
- Also shown is the minimum margin between likely outcome and public expenditure constraint and the associated risk levels for each of the four years of the Review period. I have again combined the operating cost and capital expenditure efficiency target and assumed that they are dependent.

Figure 33.3: Cumulative risk profile for public expenditure. Operating and capital cost efficiencies – dependent. Scotland Profile A 2002-03



In Figure 33.3, Scenario A shows a high risk of exceeding the public expenditure constraint in 2002-03 (90% chance).

Figure 33.4 shows that the likelihood and extent of non-compliance with the public expenditure constraint grows over time. By 2005-06, the chances of a £300 million shortfall are estimated to be almost 10%.

Figure 33.5 shows that the chances of Scenario B exceeding the public expenditure constraint in 2004-05 are very small (2%). Figure 33.6 shows that only in that year is there any material risk of a shortfall.

Figure 33.7 shows that for Scenario C, the risk of exceeding the public expenditure constraint is, like Scenario B, negligible. Moreover, there is no measurable risk of exceeding the resource accounting budget in any of the four years of the Review period. This is shown in Figure 33.8.

Figure 33.4: Minimum projected margin on public expenditure (£m). Operating and capital cost efficiencies – dependent. Scotland Profile A

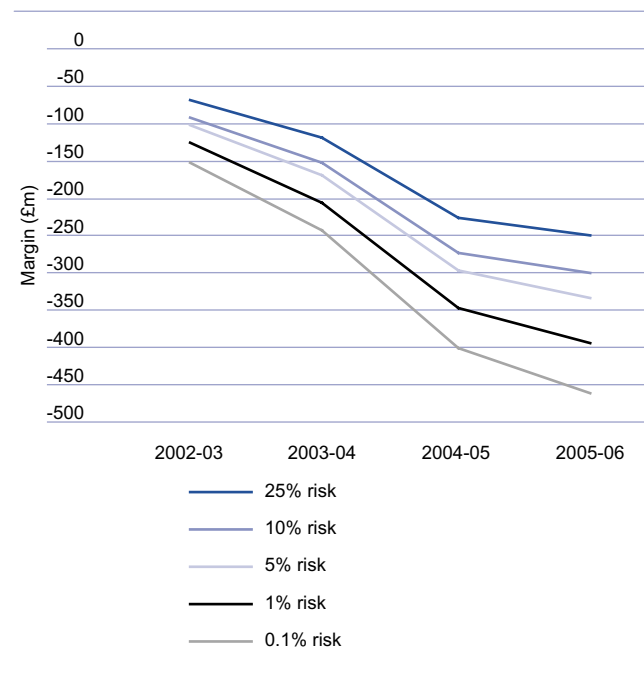


Figure 33.5: Cumulative risk profile for public expenditure. Operating and capital cost efficiencies – dependent. Scotland Profile B 2005-06

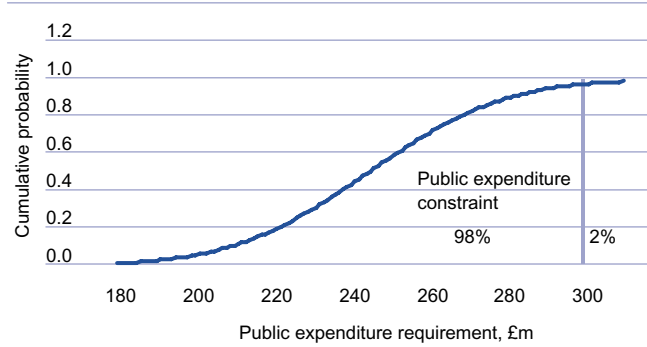


Figure 33.6: Minimum projected margin on public expenditure (£m). Operating and capital cost efficiencies – dependent. Scotland profile B

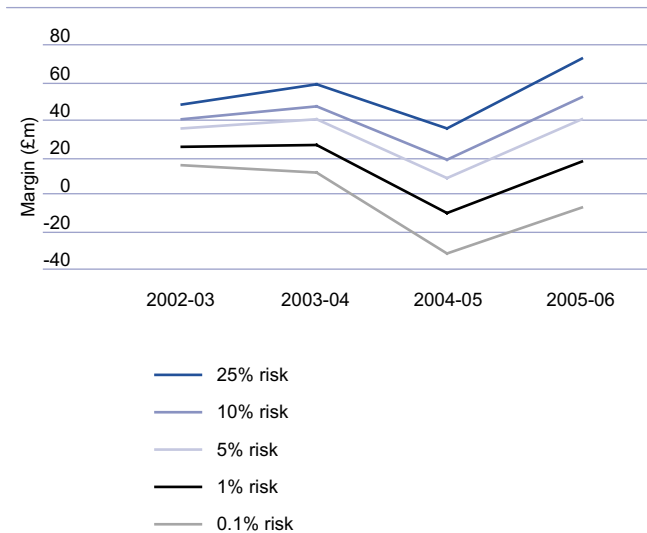


Figure 33.7: Cumulative risk profile for public expenditure. Operating and capital cost efficiencies – dependent. Scotland profile C 2002-03

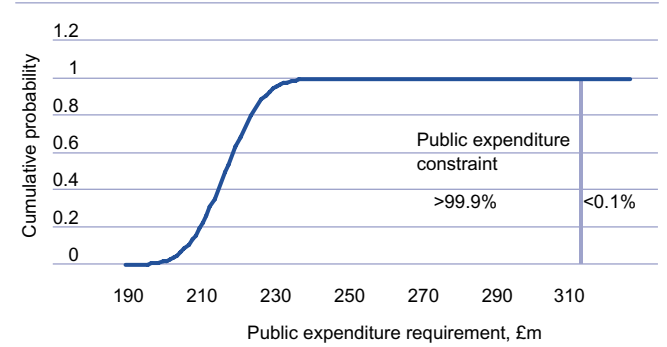
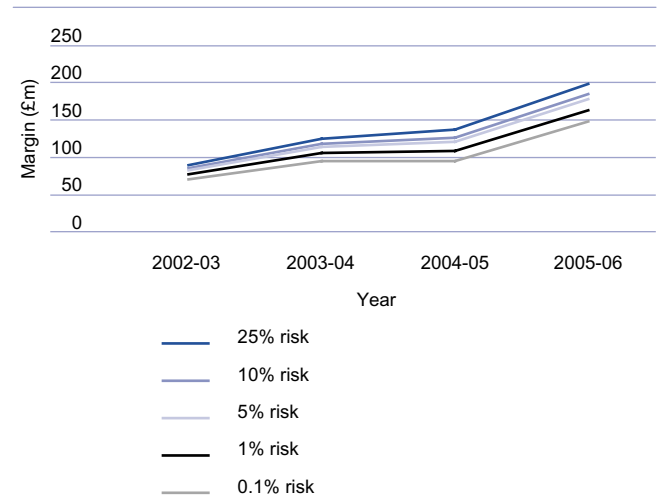


Figure 33.8: Minimum projected margin on public expenditure (£m). Operating and capital cost efficiencies – dependent. Scotland profile C



d) Conclusion

I have conducted a very thorough risk analysis of the results of my financial model and of the most critical assumptions that I have made. I am able to conclude with confidence that the targets that I have set and the recommendations I have made on revenue caps are reasonable and achievable. It is entirely within the control of the management of the proposed Scottish Water to ensure that the public expenditure constraint is not breached. I do not believe that this is at all likely. However, it is imperative that there is no delay in tackling the targets.

Section 7: Chapter 34

Assessment of Revenue Cap: Financial Summary for East of Scotland Water Authority

This chapter describes the principal results of my financial model for East of Scotland Water Authority in each year of the current regulatory period (i.e. 2001-02 to 2005-06). The results of this model would apply in the event that the Scottish Parliament does not endorse the creation of Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. The requirement is within the public expenditure limits set out in the letter from the Minister that commissioned this Review. A summary of the formal risk analysis of my recommendations, which was also requested in the commissioning letter, is provided in Chapter 37.

a) Financial summary for East of Scotland Water Authority (proposed resource budget in line with commissioning letter)

My aim is to keep the revenue that is raised from customers to the lowest possible level whilst allowing a financially and

environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total increases, but is still less than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of East of Scotland Water Authority's revenues.

My recommended overall revenue cap, in the event that the current balance of public expenditure between the authorities is maintained, is indicated in Table 34.1. Table 34.1 also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 47% of total operating cost. The share of base operating cost increases to 81% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

Table 34.1: Indicative revenue breakdown

Revenue split by customer type:	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£151.8m	£171.2m	£186.4m	£198.0m	£204.4m
% change on previous year	18.0%	12.8%	8.9%	6.2%	3.2%
Non-domestic revenue	£58.0m	£65.0m	£70.3m	£74.1m	£76.0m
% change on previous year	(3.0%)	12.0%	8.1%	5.5%	2.5%
Large user revenue	£17.8m	£17.8m	£17.8m	£17.8m	£17.8m
% change on previous year	(21.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£6.4m	£7.4m	£8.5m	£9.8m	£11.3m
% change on previous year	(6.5%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£15.2m	£17.1m	£18.4m	£19.5m	£19.9m
% change on previous year	6.0%	12.0%	8.1%	5.5%	2.5%
Net profit from non-core business activities	£0.0m	£0.2m	£0.4m	£0.4m	£0.4m
Total revenue	£249.3m	£278.6m	£301.8m	£319.6m	£329.7m
% change on previous year	n/a	11.8%	8.3%	5.9%	3.2%
Domestic revenue as % total	60.9%	61.5%	61.8%	62.0%	62.0%
Non-domestic revenue as % of total	39.1%	38.5%	38.2%	38.0%	38.0%

Table 34.2: Operating costs summary

Base operating costs	2001-02	2002-03	2003-04	2004-05	2005-06
Base	£104.5m	£107.1m	£109.8m	£112.6m	£115.4m
New	£0.0m	£0.8m	£1.7m	£2.6m	£3.6m
Efficiency target	(£3.2m)	(£13.1m)	(£15.2m)	(£16.4m)	(£17.7m)
Total	£101.3m	£94.8m	£96.3m	£98.8m	£101.2m
Spend to Save operating costs	£0.0m	£12.4m	£26.4m	£7.8m	£0.0m
PPP costs	£23.0m	£30.0m	£33.0m	£34.0m	£35.0m
Depreciation charge:					
Non-infrastructure assets charge	£44.0m	£45.7m	£50.6m	£51.1m	£51.7m
Infrastructure charge	£46.2m	£39.2m	£37.3m	£53.3m	£62.3m
Total	£90.2m	£85.0m	£87.9m	£104.4m	£114.0m
Total operating costs	£214.5m	£222.2m	£243.6m	£244.9m	£250.2m

I expect East of Scotland Water Authority to close 50% of the efficiency gap with comparator companies in England and Wales. This will result in base operating cost falling to 39% of total operating cost. Base operating cost will then account for 72% of the total, excluding depreciation. Table 34.2 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 11% of total operating costs in 2001-02. This increases to 14% by 2005-06. I have not set East of Scotland Water Authority an efficiency target for its PPP contracts; however, the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for East of Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts on the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 29. This also increases the total depreciation charge. I believe that

the depreciation charge that I have estimated is more in line with the actual expected life of the assets of East of Scotland Water Authority. The costs are summarised in Table 34.2.

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased slightly the capital programme in consultation with the authority's management in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure that relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably. The capital investment values are given in Table 34.3.

Table 34.4 details the cash flow of East of Scotland Water Authority. In 2002-03, customer revenue funds 89% of the total expenditure of the authority. East of Scotland Water Authority increases its outstanding debt by a further £33.9 million to cover the cash outflow in the first year of the Review period.

By 2004-05, revenue from customers is sufficient to fund all the expenditure of East of Scotland Water Authority and to make a small repayment of debt. The authority will, however, still have increased its total debt by £65.1 million over the four years of this regulatory period. This will position East of Scotland Water

Authority well for the future, since it is important to retain financial flexibility and the ability to borrow.

This will certainly improve the outlook for customer prices if there is a need to invest to meet a new environmental deadline or to respond to an operational problem. Flexibility may also be important in ensuring that there is no question of the authority choosing a PPP project because of constraints on its ability to borrow. The proportion of customers' bills that goes towards paying interest will also begin to fall during this period.

The baseline budget is the public expenditure available to East of Scotland Water Authority. I have taken this budget from the

Minister's commissioning letter. East of Scotland Water Authority's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

My revenue caps are sufficient to ensure that East of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that

Table 34.3: Capital investment

Capital Investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£99.8m	£107.6m	£123.6m	£111.7m	£117.2m
Infrastructure	£31.7m	£30.1m	£28.0m	£48.6m	£60.5m
Efficiency target	£0.0m	(£24.8m)	(£28.9m)	(£32.6m)	(£37.7m)
Total	£131.4m	£112.9m	£122.7m	£127.6m	£140.0m
Spend to Save	£0.0m	£4.7m	£10.9m	£0.0m	£0.0m
Total capital investment	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m

Table 34.4: Summary of cash flow movements

Cash outgoings	2001-02	2002-03	2003-04	2004-05	2005-06
Operating costs	£124.3m	£137.2m	£155.7m	£140.5m	£136.2m
Interest charge	£49.9m	£51.3m	£52.5m	£51.9m	£51.2m
Investment	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m
Proceeds from disposals	£0.0m	(£1.1m)	(£1.2m)	(£1.2m)	(£1.2m)
Working capital	(£19.3m)	£7.7m	(£1.6m)	(£1.3m)	(£0.7m)
Total outgoings	£286.4m	£312.5m	£339.1m	£317.7m	£325.5m
Funded by:					
Revenue	£249.3m	£278.6m	£301.8m	£319.6m	£329.7m
New debt	£37.1m	£33.9m	£37.3m	(£1.9m)	(£4.2m)
Total funding	£286.4m	£312.5m	£339.1m	£317.7m	£325.5m

Table 34.5: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£49.9m	£51.3m	£52.5m	£51.9m	£51.2m
Revenue	£249.3m	£278.6m	£301.8m	£319.6m	£329.7m
Interest charge as a percentage of revenue	20.0%	18.4%	17.4%	16.3%	15.5%

Table 34.6. Resource accounting analysis

Resource accounting analysis	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£34.8m	£57.6m	£59.3m	£75.8m	£80.8m
Total capital investment spend	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m
Total depreciation and IRE charged to the Income and Expenditure account	£90.2m	£85.0m	£87.9m	£104.4m	£114.0m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£2.7m	£4.9m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£96.7m	£60.0m	£74.3m	£54.5m	£64.1m
Baseline budget allowed under resource accounting	£83.8m	£87.1m	£83.1m	£83.1m	£83.1m
Variance to baseline	(£12.9m)	£27.2m	£8.8m	£28.6m	£18.9m

Table 34.7: Financial indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.9%	6.8%	6.6%	6.6%	6.5%
% Change in level of interest/ % change in level of revenue	n/a	0.1	0.1	(0.1)	(0.1)
Free cash flow	£12.9m	£17.3m	£15.3m	£53.8m	£55.4m
Surplus/(deficit) of Spend to Save to operating costs efficiency targets	(£3.2m)	£3.9m	£22.1m	(£8.6m)	(£17.7m)

there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

Table 34.6 summarises the resource accounting budget for East of Scotland Water Authority.

The level of interest is growing less quickly than revenue each year of the Review period. This is demonstrated by the ratio ' % change in level of interest / % change in level of revenue' in Table 34.7 where the ratio is less than one. The free cash flow increases throughout the period and is sufficient in 2004-05 to reduce the actual outstanding debt. The surplus in years 2002-

03 and 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be at around 1.5, as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. Good progress towards this target is made during this regulatory period. In the future I would plan to keep this ratio at around 1.5, and this should ensure that we can keep customer charge increases to the absolute minimum.

Table 34.8: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	0.3	0.3	0.3	1.0	1.1
Total base operating costs to revenue	40.6%	34.1%	32.0%	30.9%	30.7%
Return on current cost assets (after exceptional items)	5.0%	7.5%	7.2%	8.7%	8.9%
Average asset life (years)	24	24	23	24	25

The return on average current cost net assets exceeds the targeted rate of 6% in each year of the Review period and the cumulative rate of return exceeds the targeted 6.5%.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level, resulting in an overall useful life of between 23 and 25 years.

b) Financial summary for East of Scotland Water Authority (proposed revised resource budget)

This section describes the principal results of a second scenario from my financial model for East of Scotland Water Authority. This scenario generates revenue caps for each year of the current regulatory period and would apply in the event that the Scottish Parliament does not endorse Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. This second scenario is different from the first version in that I have changed the balance of public expenditure in order to produce the lowest overall increases for customers across Scotland. The total public expenditure requirement across the three authorities is within the public expenditure limits set in the Minister's commissioning letter.

My aim is to keep the revenue that is raised from customers to the lowest possible level whilst allowing a financially and environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total increases, but is still lower than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of East of Scotland Water Authority's revenues.

My recommended overall revenue cap is indicated in Table 34.9. Table 34.9 also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 47% of total operating cost. The share of base operating cost increases to 81% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

I expect East of Scotland Water Authority to close 50% of the efficiency gap with comparator companies in England and Wales. This will result in base operating cost falling to 39% of total operating cost. Base operating cost will then account for 72% of the total, excluding depreciation. Table 34.10 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 11% of total operating costs in 2001-02. This increases to 14% by 2005-06. I have not set East of Scotland Water Authority an efficiency target for its PPP contracts; however, the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for East of Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts on the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 29. This also increases the total depreciation charge. I believe that the depreciation charge I have estimated is more in line with the actual expected life of the assets of East of Scotland Water Authority. The costs are summarised in Table 34.10.

Table 34.9: Indicative revenue breakdown

Revenue split by customer type	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£151.8m	£171.2m	£190.1m	£214.4m	£220.2m
% change on previous year	18.0%	12.8%	11.0%	12.8%	2.7%
Non-domestic revenue	£58.0m	£65.0m	£71.7m	£80.3m	£81.9m
% change on previous year	(3.0%)	12.0%	10.3%	12.0%	2.0%
Large user revenue	£17.8m	£17.8m	£17.8m	£17.8m	£17.8m
% change on previous year	(21.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£6.4m	£7.4m	£8.5m	£9.8m	£11.3m
% change on previous year	(6.5%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£15.2m	£17.1m	£18.8m	£21.1m	£21.5m
% change on previous year	6.0%	12.0%	10.3%	12.0%	2.0%
Net profit from non-core business activities	£0.0m	£0.2m	£0.4m	£0.4m	£0.4m
Total revenue	£249.3m	£278.6m	£307.3m	£343.7m	£353.0m
% change on previous year	n/a	11.8%	10.3%	11.9%	2.7%
Domestic revenue as % of total	60.9%	61.5%	61.9%	62.4%	62.4%
Non-domestic revenue as % total	39.1%	38.5%	38.1%	37.6%	37.6%

Table 34.10: Operating costs summary

Base operating costs	2001-02	2002-03	2003-04	2004-05	2005-06
Base	£104.5m	£107.1m	£109.8m	£112.6m	£115.4m
New	£0.0m	£0.8m	£1.7m	£2.6m	£3.6m
Efficiency target	(£3.2m)	(£13.1m)	(£15.2m)	(£16.4m)	(£17.7m)
Total	£101.3m	£94.8m	£96.3m	£98.8m	£101.2m
Spend to Save operating costs	£0.0m	£12.4m	£26.4m	£7.8m	£0.0m
PPP costs	£23.0m	£30.0m	£33.0m	£34.0m	£35.0m
Depreciation charge:					
Non-infrastructure assets charge	£44.0m	£45.7m	£50.6m	£51.1m	£51.7m
Infrastructure charge	£46.2m	£39.2m	£37.3m	£53.3m	£62.3m
Total	£90.2m	£85.0m	£87.9m	£104.4m	£114.0m
Total operating costs	£214.5m	£222.2m	£243.6m	£244.9m	£250.2m

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure that relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably.

Table 34.12 details the cash flow of East of Scotland Water Authority. In 2002-03, customer revenue funds 89% of the total expenditure of the authority. East of Scotland Water Authority increases its outstanding debt by a further £33.9 million to cover the cash outflow in the first year of the Review period.

By 2004-05, revenue from customers is sufficient to fund all the expenditure of East of Scotland Water Authority and to make a small repayment of debt. The authority will, however, have increased its total debt by £5.9 million over the four years of this regulatory period. This will position East of Scotland Water Authority well for the future, since it is important to retain financial flexibility and the ability to borrow.

This will certainly improve the outlook for customer prices if there is a need to invest to meet a new environmental deadline or to respond to an operational problem. Flexibility may also be important in ensuring that there is no question of the authority choosing a PPP project because of constraints on its ability to

Table 34.11: Capital investment

Capital Investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£99.8m	£107.6m	£123.6m	£111.7m	£117.2m
Infrastructure	£31.7m	£30.1m	£28.0m	£48.6m	£60.5m
Efficiency target	£0.0m	(£24.8m)	(£28.9m)	(£32.6m)	(£37.7m)
Total	£131.4m	£112.9m	£122.7m	£127.6m	£140.0m
Spend to Save	£0.0m	£4.7m	£10.9m	£0.0m	£0.0m
Overall total	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m

Table 34.12: Summary of cash flow movements

Cash outgoings	2001-02	2002-03	2003-04	2004-05	2005-06
Operating costs	£124.3m	£137.2m	£155.7m	£140.5m	£136.2m
Interest charge	£49.9m	£51.3m	£52.2m	£50.3m	£48.3m
Investment	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m
Proceeds from disposals	£0.0m	(£1.1m)	(£1.2m)	(£1.2m)	(£1.2m)
Working capital	(£19.3m)	£7.7m	(£2.0m)	(£2.6m)	(£0.7m)
Total outgoings	£286.4m	£312.5m	£338.4m	£314.7m	£322.8m
Funded by:					
Revenue	£249.3m	£278.6m	£307.3m	£343.7m	£353.0m
New debt	£37.1m	£33.9m	£31.1m	(£28.9m)	(£30.2m)
Total funding	£286.4m	£312.5m	£338.4m	£314.7m	£322.8m

Table 34.13: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£49.9m	£51.3m	£52.2m	£50.3m	£48.3m
Revenue	£249.3m	£278.6m	£307.3m	£343.7m	£353.0m
Interest charge as a percentage of revenue	20.0%	18.4%	17.0%	14.6%	13.7%

Table 34.14: Resource accounting analysis

Resource accounting analysis	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£34.8m	£57.6m	£64.8m	£99.9m	£104.0m
Total capital investment spend	£131.4m	£117.5m	£133.6m	£127.6m	£140.0m
Total depreciation and IRE charged to the Income and Expenditure account	£90.2m	£85.0m	£87.9m	£104.4m	£114.0m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£2.6m	£4.8m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£96.7m	£60.0m	£68.8m	£30.3m	£40.8m
Baseline budget allowed under resource accounting	£83.8m	£77.1m	£75.4m	£40.0m	£49.8m
Variance to baseline	(£12.9m)	£17.2m	£6.6m	£9.7m	£9.0m

borrow. The proportion of customers' bills that goes towards paying interest will also begin to fall during this period.

Table 34.14 summarises the resource accounting budget for East of Scotland Water Authority.

The baseline budget is the public expenditure available to East of Scotland Water Authority. I have taken this budget from the Minister's commissioning letter and have reappropriated it between the three authorities in a way which results in an equitable price profile for each authority. East of Scotland Water Authority's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for

public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

My revenue caps are sufficient to ensure that East of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

The level of interest is growing less quickly than revenue each year of the Review period. This is demonstrated by the ratio '% change in level of interest / % change in level of revenue' in Table 34.15 where the ratio is less than one. The free cash flow increases throughout the period and is sufficient in 2004-05 to reduce the actual outstanding debt. The surplus in 2002-03 and 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge.

This should ideally be at around 1.5, as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. I expect this target to be achieved in 2004-05. In the future I would plan to keep this ratio at around 1.5, and this should ensure that we can keep customer charge increases to the absolute minimum.

The return on average current cost net assets exceeds the targeted rate of 6% in each year of the Review period. The cumulative return also exceeds the targeted 6.5% in each year.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level resulting in an overall useful life of between 23 and 25 years.

Table 34.15: Financial Indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.9%	6.8%	6.7%	6.7%	6.7%
% Change in level of interest/ % change in level of revenue	n/a	0.2	0.2	(0.3)	(1.5)
Free cash flow	£12.9m	£17.3m	£21.1m	£79.3m	£78.6m
Surplus/(deficit) of Spend to Save to operating costs efficiency targets	(£3.2m)	£3.9m	£22.1m	(£8.6m)	(£17.7m)

Table 34.16: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	0.3	0.3	0.4	1.6	1.6
Total base operating costs to revenue	40.6%	34.1%	31.4%	28.8%	28.7%
Return on current cost assets (after exceptional items)	5.0%	7.5%	7.9%	11.5%	11.5%
Average asset life (years)	24	24	23	24	25

Section 7: Chapter 35

Assessment of Revenue Cap: Financial Summary for North of Scotland Water Authority

This chapter describes the principal results of my financial model for North of Scotland Water Authority in each year of the current regulatory period. The results of this model would apply in the event that the Scottish Parliament does not endorse Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. The requirement is within the public expenditure limits set in the letter from the Minister, which commissioned this Review. A summary of the formal risk analysis to my recommendations, which was also requested in the commissioning letter, is provided in Chapter 37.

a) Financial summary for North of Scotland Water Authority (proposed resource budget in line with commissioning letter)

My aim is obviously to keep the revenue that is raised from customers to the lowest possible level consistent with a financially and environmentally sustainable industry in

Scotland. The proportion of domestic revenue within the total increases, but is still less than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of North of Scotland Water Authority's revenues.

My recommended overall revenue cap, in the event that the current balance of public expenditure between the authorities is maintained, is indicated in Table 35.1. Table 35.1 also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 49% of total operating cost. The share of base operating cost increases to 79% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

Table 35.1: Indicative revenue breakdown

Revenue split by customer type	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£133.3m	£157.1m	£166.1m	£200.3m	£201.7m
% Change on previous year	17.0%	17.8%	5.7%	20.6%	0.7%
Non-domestic revenue	£88.4m	£103.5m	£108.6m	£130.1m	£130.1m
% Change on previous year	10.0%	17.0%	5.0%	19.8%	0.0%
Large user revenue	£1.4m	£1.4m	£1.4m	£1.4m	£1.4m
% Change on previous year	(55.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£1.6m	£1.8m	£2.1m	£2.4m	£2.8m
% Change on previous year	(41.5%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£7.2m	£8.5m	£8.9m	£10.7m	£10.7m
% Change on previous year	4.5%	17.0%	5.0%	19.8%	0.0%
Net profit from non-core business activities	£0.0m	£0.0m	£0.0m	£0.1m	£0.1m
Total revenue	£232.0m	£272.3m	£287.2m	£345.0m	£346.8m
% Change on previous year	n/a	17.4%	5.5%	20.1%	0.5%
Domestic revenue as % total	57.5%	57.7%	57.8%	58.1%	58.2%
Non-domestic revenue as % of total	42.5%	42.3%	42.2%	41.9%	41.8%

I expect North of Scotland Water Authority to close 50% of the efficiency gap with England and Wales. This will result in base operating cost falling to 32% of total operating cost. Base operating cost will then account for 61% of the total, excluding depreciation. Table 35.2 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 13% of total operating costs in 2001-02. This increases to 20% by 2005-06. I have not set North of Scotland Water Authority an efficiency target for their PPP contracts, however the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for North of Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in chapter 30. This also increases the total depreciation charge. I believe that the depreciation charge, which I have estimated is more in line with the actual expected life of the assets of North of Scotland Water Authority. The costs are summarised in Table 35.2.

Table 35.2: Costs summary

Base operating costs	2001-02	2002-03	2003-04	2004-05	2005-06
Base	£94.1m	£96.5m	£98.9m	£101.4m	£103.9m
New	£0.4m	£0.9m	£1.3m	£1.7m	£2.1m
Efficiency target	(£3.6m)	(£14.9m)	(£17.2m)	(£18.6m)	(£20.0m)
Total	£90.9m	£82.5m	£83.0m	£84.5m	£86.0m
Spend to Save operating costs	£0.0m	£9.3m	£19.7m	£5.8m	£0.0m
PPP costs	£23.0m	£47.3m	£48.4m	£49.7m	£50.9m
Depreciation charge:					
Non-infrastructure assets charge	£26.5m	£35.8m	£45.1m	£51.1m	£52.0m
Infrastructure charge	£43.3m	£45.5m	£45.7m	£63.3m	£69.8m
Total	£69.7m	£81.3m	£90.8m	£114.4m	£121.8m
Total operating costs	£183.7m	£220.3m	£241.9m	£254.4m	£258.7m

Table 35.3: Capital investment

Capital Investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£119.8m	£151.0m	£126.4m	£169.4m	£141.0m
Infrastructure	£32.3m	£42.1m	£42.9m	£65.7m	£74.6m
Efficiency target	£0.0m	(£34.8m)	(£32.3m)	(£47.8m)	(£45.7m)
Total	£152.1m	£158.4m	£137.0m	£187.3m	£169.9m
Spend to Save	£0.0m	£3.5m	£8.1m	£0.0m	£0.0m
Overall total	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m

Table 35.4: Summary of cash flow movements

Cash outgoings	2001-02	2002-03	2003-04	2004-05	2005-06
Operating costs	£113.9m	£139.0m	£151.1m	£140.0m	£136.9m
Interest charge	£32.3m	£35.8m	£37.8m	£38.3m	£38.2m
Investment	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m
Proceeds from disposals	£0.0m	(£1.2m)	(£1.2m)	(£1.2m)	(£1.2m)
Working capital	£2.0m	£9.1m	(£1.1m)	(£4.1m)	(£0.1m)
Total outgoings	£300.3m	£344.6m	£331.7m	£360.3m	£343.6m
Funded by:					
Revenue	£232.0m	£272.3m	£287.2m	£345.0m	£346.8m
New debt	£68.2m	£72.3m	£44.5m	£15.3m	(£3.2m)
Total funding	£300.3m	£344.6m	£331.7m	£360.3m	£343.6m

Table 35.5: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£32.3m	£35.8m	£37.8m	£38.3m	£38.2m
Revenue	£232.0m	£272.3m	£287.2m	£345.0m	£346.8m
Interest charge as a percentage of revenue	13.9%	13.1%	13.2%	11.1%	11.0%

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly in consultation with the authority's management in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure, which relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably.

Table 35.4 details the cashflow of North of Scotland Water Authority. In 2002-03, customer revenue funds 79% of the total expenditure of the authority. North of Scotland Water Authority increases its outstanding debt by a further £72.3 million to cover the cash outflow in the first year of the Review period.

By 2005-06, revenue from customers is sufficient to fund all the expenditure of North of Scotland Water Authority. The authority will, however, still have increased its total debt by £128.8 million over the four years of this regulatory period. This significant debt burden would limit North of Scotland Water Authority's ability to absorb shocks in the future. Charges are already at a high level and further rises resulting from further debt increases would not be welcome.

The proportion of customer bills, which goes to pay interest will also begin to reduce during this period, but this results from the lower cost of new debt rather than any repayments of principal.

Table 35.6 summarises the resource accounting budget for North of Scotland Water Authority.

The baseline budget is the public expenditure available to North of Scotland Water Authority. I have taken this budget from the Minister's commissioning letter. North's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

My revenue caps are sufficient to ensure that North of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting

Table 35.6: Resource accounting analysis

Resource accounting analysis	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£48.4m	£53.2m	£46.6m	£91.8m	£89.3m
Total capital investment spend	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m
Total depreciation and IRE charged to the Income and Expenditure account	£69.7m	£81.3m	£90.8m	£114.4m	£121.8m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£4.4m	£8.6m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£103.7m	£108.7m	£98.5m	£99.8m	£89.2m
Baseline budget allowed under resource accounting	£112.1m	£116.6m	£111.1m	£111.1m	£111.1m
Variance to baseline	£8.4m	£7.9m	£12.6m	£11.3m	£22.0m

revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

The level of interest is growing less quickly than revenue towards the end of the review period. This is demonstrated by the ratio ' % change in level of interest / % change in level of revenue ' in the above table where the ratio is less than one. The free cash flow increases throughout the period and is sufficient in 2005-06 to reduce the actual outstanding debt. The surplus in 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach, which I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be about 1.5 as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. Good progress towards this target is made during this regulatory

period. In the future I would plan on keeping this ratio at about 1.5 and this should ensure that we can keep customer charge increases to the absolute minimum.

The return on average current cost net assets exceeds the targeted rate of 6% in each year of the review period and the cumulative rate of return exceeds the targeted 6.5%.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level resulting in an overall useful life of between 19 and 25 years.

b) Financial summary for North of Scotland Water Authority (proposed revised resource budget)

This section describes the principal results of a second scenario from my financial model for North of Scotland Water Authority. This scenario generates revenue caps for each year of the current regulatory period and would apply in the event that the Scottish Parliament does not endorse Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. This second scenario is

Table 35.7: Financial indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.6%	6.4%	6.2%	6.2%	6.2%
% Change in level of interest/ % change in level of revenue	n/a	0.6	1.0	0.1	(0.9)
Free cash flow	(£35.9m)	(£36.5m)	(£6.7m)	£23.1m	£41.4m
Surplus/ (deficit) of Spend to Save to operating costs efficiency targets	(£3.6m)	(£2.1m)	£10.6m	(£12.8m)	(£20.0m)

Table 35.8: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	(1.1)	(1.0)	(0.2)	0.6	1.1
Total base operating cost to revenue	39.2%	30.3%	28.9%	24.5%	24.8%
Return on current cost assets (after exceptional items)	8.5%	7.7%	6.0%	10.9%	9.8%
Average asset life (years)	25	22	19	19	20

different from the first version in that I have changed the balance of public expenditure in order to produce the lowest overall increases for customers across Scotland. The total public expenditure requirement across the three authorities is within the public expenditure limits set in the Minister's commissioning letter.

My aim is obviously to keep the revenue that is raised from customers to the lowest possible level consistent with a financially and environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total increases, but is still less than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of North of Scotland Water Authority's revenues.

My recommended overall revenue cap is indicated in Table 35.9. This table also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 49% of total operating cost. The share of base operating cost increases to 79% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

I expect North of Scotland Water Authority to close 50% of the efficiency gap with England and Wales. This will result in base operating cost falling to 32% of total operating cost. Base

Table 35.9: Indicative revenue breakdown

Revenue split by customer type	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£133.3m	£150.4m	£168.1m	£178.6m	£183.4m
% Change on previous year	17.0%	12.8%	11.8%	6.2%	2.7%
Non-domestic revenue	£88.4m	£99.0m	£109.9m	£116.0m	£118.3m
% Change on previous year	10.0%	12.0%	11.0%	5.5%	2.0%
Large user revenue	£1.4m	£1.4m	£1.4m	£1.4m	£1.4m
% Change on previous year	(55.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£1.6m	£1.8m	£2.1m	£2.4m	£2.8m
% Change on previous year	(41.5%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£7.2m	£8.1m	£9.0m	£9.5m	£9.7m
% Change on previous year	4.5%	12.0%	11.0%	5.5%	2.0%
Net profit from non-core business activities	£0.0m	£0.0m	£0.0m	£0.1m	£0.1m
Total revenue	£232.0m	£260.8m	£290.6m	£308.0m	£315.8m
% Change on previous year	n/a	12.4%	11.4%	6.0%	2.5%
Domestic revenue as % total	57.5%	57.7%	57.8%	58.0%	58.1%
Non-domestic revenue as % of total	42.5%	42.3%	42.2%	42.0%	41.9%

operating cost will then account for 61% of the total, excluding depreciation. Table 35.10 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 13% of total operating costs in 2001-02. This increases to 20% by 2005-06. I have not set North of Scotland Water Authority an efficiency target for their PPP contracts, however the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for North of

Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 30. This also increases the total depreciation charge. I believe that the depreciation charge, which I have estimated is more in line with the actual expected life of the assets of North of Scotland Water Authority. The costs are summarised in Table 35.10.

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly in order to produce a

Table 35.10: Costs summary

Base Operating Costs	2001-02	2002-03	2003-04	2004-05	2005-06
Base	£94.1m	£96.5m	£98.9m	£101.4m	£103.9m
New	£0.4m	£0.9m	£1.3m	£1.7m	£2.1m
Efficiency target	(£3.6m)	(£14.9m)	(£17.2m)	(£18.6m)	(£20.0m)
Total	£90.9m	£82.5m	£83.0m	£84.5m	£86.0m
Spend to Save operating costs	£0.0m	£9.3m	£19.7m	£5.8m	£0.0m
PPP costs	£23.0m	£47.3m	£48.4m	£49.7m	£50.9m
Depreciation charge:					
Non-infrastructure assets charge	£26.5m	£35.8m	£45.1m	£51.1m	£52.0m
Infrastructure charge	£43.3m	£45.5m	£45.7m	£63.3m	£69.8m
Total	£69.7m	£81.3m	£90.8m	£114.4m	£121.8m
Total operating costs	£183.7m	£220.3m	£241.9m	£254.4m	£258.7m

Table 35.11: Capital investment

Capital investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£119.8m	£151.0m	£126.4m	£169.4m	£141.0m
Infrastructure	£32.3m	£42.1m	£42.9m	£65.7m	£74.6m
Efficiency target	£0.0m	(£34.8m)	(£32.3m)	(£47.8m)	(£45.7m)
Total	£152.1m	£158.4m	£137.0m	£187.3m	£169.9m
Spend to Save	£0.0m	£3.5m	£8.1m	£0.0m	£0.0m
Overall total	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m

better price profile for customers. I have not re-phased any element of the capital expenditure, which relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably.

Table 35.12 details the cash flow of North of Scotland Water Authority. In 2002-03, customer revenue funds 75% of the total expenditure of the authority. North of Scotland Water Authority increases its outstanding debt by a further £85.4 million to cover the cash outflow in the first year of the Review period.

North of Scotland Water Authority will have increased its total debt by £214.9 million over the four years of this regulatory period. It has not been practical in this Review period to bring North of Scotland Water Authority into a financially sustainable position, without the need for further large increases in customer bills. However, the position of the authority significantly improves over the period with a decline in the rate of growth of debt. The proportion of customer bills, which goes to pay interest will be broadly stable during this period.

Table 35.12: Summary of cash flow movements

Cash outgoings	2001-02	2002-03	2003-04	2004-05	2005-06
Operating costs	£113.9m	£139.0m	£151.1m	£140.0m	£136.9m
Interest charge	£32.3m	£36.4m	£38.2m	£40.8m	£42.3m
Investment	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m
Proceeds from disposals	£0.0m	(£1.2m)	(£1.2m)	(£1.2m)	(£1.2m)
Working capital	£1.9m	£10.1m	(£2.1m)	(£1.2m)	(£0.5m)
Total outgoings	£300.1m	£346.2m	£331.1m	£365.6m	£347.3m
Funded by:					
Revenue	£232.0m	£260.8m	£290.6m	£308.0m	£315.8m
New debt	£68.1m	£85.4m	£40.5m	£57.6m	£31.5m
Total funding	£300.1m	£346.2m	£331.1m	£365.6m	£347.3m

Table 35.13: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£32.3m	£36.4m	£38.2m	£40.8m	£42.3m
Revenue	£232.0m	£260.8m	£290.6m	£308.0m	£315.8m
Interest charge as a percentage of revenue	13.9%	14.0%	13.1%	13.2%	13.4%

Table 35.14 summarises the resource accounting budget for North of Scotland Water Authority.

The baseline budget is the public expenditure available to North of Scotland Water Authority. I have taken this budget from the Minister's commissioning letter and have reappportioned it between the three authorities in a way, which results in an equitable price profile for each authority. North's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the

operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

My revenue caps are sufficient to ensure that North of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

Table 35.14: Resource accounting analysis

Resource accounting analysis	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£48.4m	£41.7m	£49.9m	£54.8m	£58.3m
Total capital investment spend	£152.1m	£161.8m	£145.1m	£187.3m	£169.9m
Total depreciation and IRE charged to the Income and Expenditure account	£69.7m	£81.3m	£90.8m	£114.4m	£121.8m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£4.4m	£8.8m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£103.7m	£120.2m	£95.1m	£136.9m	£120.3m
Baseline budget allowed under resource accounting	£112.1m	£136.6m	£118.8m	£145.2m	£133.0m
Variance to baseline	£8.4m	£16.4m	£23.7m	£8.4m	£12.7m

Table 35.15: Financial indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.6%	6.3%	6.2%	6.1%	6.0%
% Change in level of interest/ % change in the level of revenue	n/a	1.0	0.4	1.1	1.5
Free cash flow	(£35.8m)	(£48.9m)	(£2.3m)	(£16.8m)	£10.8m
Surplus/(deficit) of Spend to Save to operating costs efficiency targets	(£3.6m)	(£2.1m)	£10.6m	(£12.8m)	(£20.0m)

Table 35.16: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	(1.1)	(1.3)	(0.1)	(0.4)	0.3
Total base operating costs to revenue	39.2%	31.6%	28.6%	27.4%	27.2%
Return on current cost assets (after exceptional items)	8.5%	6.0%	6.5%	6.5%	6.4%
Average asset life (years)	25	22	19	19	20

The level of interest is growing more quickly than revenue in two of the four years of the review period. This is demonstrated by the ratio ' % change in level of interest / % change in level of revenue' in Table 35.15 where the ratio is greater than one. The free cash flow throughout the period and is not sufficient to reduce the actual outstanding debt. The surplus in year 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach, which I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be about 1.5 as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. I expect some progress towards this target will be made during this regulatory period. The constraints on customer prices mean that achievement of a 1.5 ratio is unlikely in the near future for North of Scotland Water Authority.

The return on average current cost net assets exceeds the targeted rate of 6% in each year of the Review period. The cumulative return also exceeds the targeted 6.5% in each year.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level resulting in an overall useful life of between 19 and 25 years.

Section 7: Chapter 36

Assessment of Revenue Cap: Financial Summary for West of Scotland Water Authority

This chapter describes the principal results of my financial model for West of Scotland Water Authority in each year of the current regulatory period. The results of this model would apply in the event that the Scottish Parliament does not endorse Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. The requirement is within the public expenditure limits set in the letter from the Minister that commissioned this Review. A summary of the formal risk analysis to my recommendations, which was also requested in the commissioning letter, is provided in Chapter 37.

a) Financial summary for West of Scotland Water Authority (proposed resource budget in line with commissioning letter)

My aim is obviously to keep the revenue that is raised from customers to the lowest possible level consistent with a financially and environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total increases, but is still less than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of West of Scotland Water Authority's revenues.

My recommended overall revenue cap, in the event that the current balance of public expenditure between the authorities is maintained, is indicated in Table 36.1. Table 36.1 also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 60% of total operating cost. The share of base operating cost increases to 94% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

I expect West of Scotland Water Authority to close 50% of the efficiency gap with England and Wales. This will result in base operating cost falling to 41% of total operating cost. Base operating cost will then account for 79% of the total, excluding depreciation. Table 36.2 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 4% of total operating costs in 2001-02. This increases to 10% by 2005-06. I have not set West of Scotland Water Authority an efficiency target for their PPP contracts,

Table 36.1: Indicative revenue breakdown

Revenue split by customer type	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic revenue	£209.9m	£233.6m	£263.4m	£309.8m	£318.3m
% Change on previous year	19.0%	11.3%	12.8%	17.6%	2.7%
Non-domestic revenue	£101.8m	£112.4m	£125.9m	£147.1m	£150.0m
% Change on previous year	12.0%	10.5%	12.0%	16.8%	2.0%
Large user revenue	£22.7m	£22.7m	£22.7m	£22.7m	£22.7m
% Change on previous year	(21.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£8.7m	£10.0m	£11.5m	£13.2m	£15.2m
% Change on previous year	(9.2%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£9.1m	£10.0m	£11.3m	£13.1m	£13.4m
% Change on previous year	4.3%	10.5%	12.0%	16.8%	2.0%
Net profit from non core business activities	£0.1m	£0.4m	£0.6m	£0.9m	£1.2m
Total revenue	£352.2m	£389.1m	£435.4m	£506.9m	£520.8m
% Change on previous year	n/a	10.5%	11.9%	16.4%	2.7%
Domestic revenue as % of total	59.6%	60.0%	60.5%	61.1%	61.1%
Non-domestic revenue as % of total	40.4%	40.0%	39.5%	38.9%	38.9%

however the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for West of Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 31. This also increases the total depreciation charge. I believe that the depreciation charge, which I have estimated is more in line with the actual expected life of the assets of West of Scotland Water Authority. The costs are summarised in Table 36.2.

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly, in consultation with the authority's management, in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure, which relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably.

Table 36.4 details the cash flow of West of Scotland Water Authority. In 2002-03, customer revenue funds 86% of the total expenditure of the authority. West of Scotland Water Authority increases its outstanding debt by a further £61.5 million to cover the cash outflow in the first year of the Review period.

Table 36.2: Costs summary

Base operating costs	2001-02	2002-03	2003-04	2004-05	2005-06
Base	£176.8m	£181.2m	£185.8m	£190.4m	£195.2m
New	£0.0m	£0.8m	£1.6m	£2.4m	£3.3m
Efficiency target	(£8.5m)	(£35.0m)	(£40.4m)	(£43.7m)	(£47.1m)
Total	£168.3m	£147.0m	£147.0m	£149.2m	£151.4m
Spend to Save operating costs	£0.0m	£18.3m	£38.9m	£11.4m	£0.0m
PPP costs	£11.0m	£34.3m	£35.3m	£35.1m	£36.8m
Depreciation charge:					
Non-infrastructure assets charge	£41.8m	£53.7m	£69.7m	£78.2m	£82.8m
Infrastructure charge	£60.3m	£42.8m	£45.4m	£82.4m	£87.9m
Total	£102.1m	£96.5m	£115.1m	£160.5m	£170.7m
Total operating costs	£281.4m	£296.1m	£336.3m	£356.2m	£358.9m

Table 36.3: Capital investment

Capital investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£138.9m	£169.8m	£186.0m	£218.8m	£218.9m
Infrastructure	£42.5m	£30.6m	£34.2m	£81.2m	£89.1m
Efficiency target	£0.0m	(£36.1m)	(£42.0m)	(£61.1m)	(£65.3m)
Total	£181.4m	£164.3m	£178.2m	£238.9m	£242.7m
Spend to Save	£0.0m	£6.9m	£16.0m	£0.0m	£0.0m
Overall total	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m

Table 36.4: Summary of cash flow movements

Cash outgoings	2001–02	2002–03	2003–04	2004–05	2005–06
Operating costs	£179.3m	£199.6m	£221.2m	£195.7m	£188.2m
Interest charge	£58.1m	£62.0m	£62.8m	£61.6m	£58.8m
Investment	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m
Proceeds from disposals	£0.0m	(£1.5m)	(£1.6m)	(£1.6m)	(£1.7m)
Working capital	£17.6m	£19.3m	(£3.3m)	(£5.1m)	(£1.0m)
Total outgoings	£436.4m	£450.5m	£473.4m	£489.5m	£487.0m
Funded by:					
Revenue	£352.2m	£389.1m	£435.4m	£506.9m	£520.8m
New debt	£84.2m	£61.5m	£38.0m	(£17.3m)	(£33.8m)
Total funding	£436.4m	£450.5m	£473.4m	£489.5m	£487.00m

Table 36.5: Debt interest in relation to revenue

	2001–02	2002–03	2003–04	2004–05	2005–06
Interest charge	£58.1m	£62.0m	£62.8m	£61.6m	£58.8m
Revenue	£352.2m	£389.1m	£435.4m	£506.9m	£520.8m
Interest charge as a percentage of revenue	16.5%	15.9%	14.4%	12.1%	11.3%

Table 36.6: Resource accounting analysis

Resource accounting analysis	2001–02	2002–03	2003–04	2004–05	2005–06
Operating profit	£70.9m	£94.5m	£100.7m	£152.2m	£163.5m
Total capital investment spend	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m
Total depreciation and IRE charged to the Income and Expenditure account	£102.1m	£96.5m	£115.1m	£160.5m	£170.7m
Average capital charge movement (from 03/04)	£0.0m	£0.0m	£0.0m	£5.5m	£10.9m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£110.6m	£76.7m	£93.5m	£92.2m	£90.1m
Baseline budget allowed under resource accounting	£106.4m	£110.6m	£105.5m	£105.5m	£105.5m
Variance to baseline	(£4.2m)	£33.9m	£12.0m	£13.3m	£15.4m

By 2004-05, revenue from customers is sufficient to fund all the expenditure of West of Scotland Water Authority and to make a small repayment of debt. The authority will, however, still have increased its total debt by £48.3 million over the four years of this regulatory period. This will position West of Scotland Water Authority well for the future, since it is important to retain financial flexibility and the ability to borrow.

This flexibility and ability to borrow will certainly improve the outlook for customer prices if there is a need to invest to meet

a new environmental deadline or to respond to an operational problem. This flexibility may also be important in ensuring that there can be no question that the authority chooses a PPP project because of constraints on its ability to borrow. The proportion of customer bills, which goes to pay interest will also begin to reduce during this period.

Table 36.6 summarises the resource accounting budget for West of Scotland Water Authority.

Table 36.7: Financial indicators

	2001-02	2002-03	2003-04	2004-05	2005-06
Weighted average cost of debt	6.6%	6.6%	6.4%	6.4%	6.3%
% Change in level of interest/ % change in level of revenue	n/a	0.6	0.1	(0.1)	(1.7)
Free cash flow	(£26.1m)	£0.5m	£24.9m	£78.9m	£92.5m
Surplus/(deficit) of Spend to Save to operating costs efficiency targets	(£8.5m)	(£9.8m)	£14.6m	(£32.2m)	(£47.1m)

Table 36.8: Financial ratios

	2001-02	2002-03	2003-04	2004-05	2005-06
Free cash flow cover of interest	(0.4)	0.0	0.4	1.3	1.6
Total base operating costs to revenue	47.8%	37.8%	33.8%	29.5%	29.1%
Return on current cost assets (after exceptional items)	7.8%	9.1%	8.8%	12.3%	12.3%
Average asset life (years)	25	22	19	19	19

The baseline budget is the public expenditure available to West of Scotland Water Authority. I have taken this budget from the Minister's commissioning letter. West's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

My revenue caps are sufficient to ensure that West of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

The level of interest is growing less quickly than revenue each year of the review period. This is demonstrated by the ratio '% change in level of interest/ % change in level of revenue' in Table 36.7 where the ratio is less than one. The free cash flow increases throughout the period and is sufficient in 2004-05 to reduce the actual outstanding debt. The surplus in year 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach, which I have

taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be about 1.5 as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. This target is achieved by 2005-06. In the future I would plan on keeping this ratio at about 1.5 and this should ensure that we can keep customer charge increases to the absolute minimum.

The return on average current cost net assets exceeds the targeted rate of 6.0% in each year of the review period and the cumulative rate of return exceeds the targeted 6.5%.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level resulting in an overall useful life of between 19 and 25 years.

b) Financial summary for West of Scotland Water Authority (proposed revised resource budget)

This section describes the principal results of a second scenario from my financial model for West of Scotland Water Authority. This scenario generates revenue caps for each year of the current regulatory period and would apply in the event

Table 36.9: Indicative revenue breakdown

Revenue split by customer type	2001–02	2002–03	2003–04	2004–05	2005–06
Domestic revenue	£209.9m	£233.6m	£263.4m	£303.7m	£310.5m
% Change on previous year	19.0%	11.3%	12.8%	15.3%	2.2%
Non-domestic revenue	£101.8m	£112.4m	£125.9m	£144.2m	£146.4m
% Change on previous year	12.0%	10.5%	12.0%	14.5%	1.5%
Large user revenue	£22.7m	£22.7m	£22.7m	£22.7m	£22.7m
% Change on previous year	(21.0%)	0.0%	0.0%	0.0%	0.0%
Trade effluent revenue	£8.7m	£10.0m	£11.5m	£13.2m	£15.2m
% Change on previous year	(9.2%)	15.0%	15.0%	15.0%	15.0%
Secondary and other revenue	£9.1m	£10.0m	£11.3m	£12.9m	£13.1m
% Change on previous year	4.3%	10.5%	12.0%	14.5%	1.5%
Net profit from non-core business activities	£0.1m	£0.4m	£0.6m	£0.9m	£1.2m
Total revenue	£352.2m	£389.1m	£435.4m	£497.6m	£509.0m
% Change on previous year	n/a	10.5%	11.9%	14.3%	2.3%
Domestic revenue as % of total	59.6%	60.0%	60.5%	61.0%	61.0%
Non-domestic revenue as % total	40.4%	40.0%	39.5%	39.0%	39.0%

that the Scottish Parliament does not endorse Scottish Water. I also outline the extent of the authority's need for public expenditure during the next four years. This second scenario is different from the first version in that I have changed the balance of public expenditure in order to produce the lowest overall increases for customers across Scotland. The total public expenditure requirement across the three authorities is within the public expenditure limits set in the Minister's commissioning letter.

My aim is obviously to keep the revenue that is raised from customers to the lowest possible level consistent with a financially and environmentally sustainable industry in Scotland. The proportion of domestic revenue within the total increases, but is still less than in England and Wales. The increased share of domestic revenue does, however, improve the predictability of West of Scotland Water Authority's revenues.

My recommended overall revenue cap is indicated in Table 36.9. Table 36.9 also outlines my estimate of revenue from each customer segment.

In the current financial year, base operating cost represents 60% of total operating cost. The share of base operating cost increases to 94% of the total if I exclude depreciation. PPP costs and Spend to Save costs account for the balance of total operating cost, excluding depreciation. I have set my efficiency

targets in this Review in relation to this base operating cost. These targets were outlined in Chapter 18.

I expect West of Scotland Water Authority to close 50% of the efficiency gap with England and Wales. This will result in base operating cost falling to 41% of total operating cost. Base operating cost will then account for 79% of the total, excluding depreciation. Table 36.10 shows how the proportion of total revenue represented by base operating cost declines.

PPP costs become significant during this period. PPP costs represent 4% of total operating costs in 2001-02. This increases to 10% by 2005-06. I have not set West of Scotland Water Authority an efficiency target for their PPP contracts, however the growing importance of the cost of PPP will require management to review the schemes regularly. Management must ensure that they are getting the best deal for customers.

Resource budgeting has resulted in an increase to the depreciation and infrastructure renewals charge for West of Scotland Water Authority. I have revalued the 1996-97 asset base to current prices in line with the requirements of the resource accounting methodology. This impacts the required depreciation charge. I have also chosen to use more prudent depreciation and infrastructure renewal policies in my financial model. I discussed the rationale for this in Chapter 31. This also increases the total depreciation charge. I believe that the depreciation charge, which I have estimated is more in line with

Table 36.10: Costs summary

Base operating costs	2001–02	2002–03	2003–04	2004–05	2005–06
Base	£176.8m	£181.2m	£185.8m	£190.4m	£195.2m
New	£0.0m	£0.8m	£1.6m	£2.4m	£3.3m
Efficiency target	(£8.5m)	(£35.0m)	(£40.4m)	(£43.7m)	(£47.1m)
Total	£168.3m	£147.0m	£147.0m	£149.2m	£151.4m
Spend to Save operating costs	£0.0m	£18.3m	£38.9m	£11.4m	£0.0m
PPP costs	£11.0m	£34.3m	£35.3m	£35.1m	£36.8m
Depreciation charge:					
Non-infrastructure assets charge	£41.8m	£53.7m	£69.7m	£78.2m	£82.8m
Infrastructure charge	£60.3m	£42.8m	£45.4m	£82.4m	£87.9m
Total	£102.1m	£96.5m	£115.1m	£160.5m	£170.7m
Total operating costs	£281.4m	£296.1m	£336.3m	£356.2m	£358.9m

the actual expected life of the assets of West of Scotland Water Authority. The costs are summarised in Table 36.10.

I have taken full account of the investment outputs required by the Quality and Standards programme. I have, however, re-phased the capital programme slightly in order to produce a better price profile for customers. I have not re-phased any element of the capital expenditure, which relates to environmental or public health compliance. My capital efficiency targets reduce the actual burden on customers considerably.

Table 36:12 details the cashflow of West of Scotland Water Authority. In 2002-03, customer revenue funds 86% of the total expenditure of the authority. West of Scotland Water Authority increases its outstanding debt by a further £61.5 million to cover the cash outflow in the first year of the Review period.

By 2004-05, revenue from customers is sufficient to fund all the expenditure of West of Scotland Water Authority and to make a small repayment of debt. The authority will, however, have increased its total debt by £71.8 million over the four years of this regulatory period. This will position West of Scotland Water Authority well for the future, since it is important to retain financial flexibility and the ability to borrow.

This flexibility and ability to borrow will certainly improve the outlook for customer prices if there is a need to invest to meet a new environmental deadline or to respond to an operational problem. This flexibility may also be important in ensuring that there can be no question that the authority chooses a PPP project because of constraints on its ability to borrow. The proportion of customer bills, which goes to pay interest will also begin to reduce during this period.

Table 36:14 below summarises the resource accounting budget for West of Scotland Water Authority.

The baseline budget is the public expenditure available to West of Scotland Water Authority. I have taken this budget from the Minister's commissioning letter and have reappportioned it between the three authorities in a way which results in an equitable price profile for each authority. West's need for public expenditure is a function of its operating profit, any movement in the capital charge and its actual capital expenditure. I calculate the actual need for public expenditure by subtracting the annual total capital expenditure from the operating profit for each year. This public expenditure must be less than (or equal to) the baseline budget contained in the commissioning letter. This is a binding constraint.

Table 36.11: Capital investment

Capital investment	2001-02	2002-03	2003-04	2004-05	2005-06
'Quality'	£138.9m	£169.8m	£186.0m	£218.8m	£218.9m
Infrastructure	£42.5m	£30.6m	£34.2m	£81.2m	£89.1m
Efficiency target	£0.0m	(£36.1m)	(£42.0m)	(£61.1m)	(£65.3m)
Total	£181.4m	£164.3m	£178.2m	£238.9m	£242.7m
Spend to Save	£0.0m	£6.9m	£16.0m	£0.0m	£0.0m
Overall total	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m

Table 36.12: Summary of cash flow movements

Cash outgoings	2001-02	2002-03	2003-04	2004-05	2005-06
Operating costs	£179.3m	£199.6m	£221.2m	£195.7m	£188.2m
Interest charge	£58.1m	£62.0m	£62.8m	£62.1m	£59.9m
Investment	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m
Proceeds from disposals	£0.0m	(£1.5m)	(£1.6m)	(£1.6m)	(£1.7m)
Working capital	£17.6m	£19.3m	(£3.3m)	(£4.4m)	(£0.8m)
Total outgoings	£436.4m	£450.5m	£473.4m	£490.7m	£488.3m
Funded by:					
Revenue	£352.2m	£389.1m	£435.4m	£497.6m	£509.0m
New debt	£84.2m	£61.5m	£38.0m	(£6.9m)	(£20.7m)
Total funding	£436.4m	£450.5m	£473.4m	£490.7m	£488.3m

Table 36.13: Debt interest in relation to revenue

	2001-02	2002-03	2003-04	2004-05	2005-06
Interest charge	£58.1m	£62.0m	£62.8m	£62.1m	£59.9m
Revenue	£352.2m	£389.1m	£435.4m	£497.6m	£509.0m
Interest charge as a percentage of revenue	16.5%	15.9%	14.4%	12.5%	11.8%

Table 36.14: Resource accounting analysis

Resource accounting analysis	2001-02	2002-03	2003-04	2004-05	2005-06
Operating profit	£70.9m	£94.5m	£100.7m	£143.0m	£151.7m
Total capital investment spend	£181.4m	£171.2m	£194.2m	£238.9m	£242.7m
Total depreciation and IRE charged to the Income and Expenditure account	£102.1m	£96.5m	£115.1m	£160.5m	£170.7m
Average capital charge movement (from 2003-04)	£0.0m	£0.0m	£0.0m	£5.5m	£11.0m
Government expenditure	£0.0m	£0.0m	£0.0m	£0.0m	£0.0m
Resource accounting forecast total	£110.6m	£76.7m	£93.5m	£101.5m	£101.9m
Baseline budget allowed under resource accounting	£106.4m	£100.6m	£105.5m	£114.5m	£116.9m
Variance to baseline	(£4.2m)	£23.9m	£12.0m	£13.0m	£15.0m

Table 36.15: Financial indicators

	2001–02	2002–03	2003–04	2004–05	2005–06
Weighted average cost of debt	6.6%	6.6%	6.4%	6.4%	6.3%
% Change in level of interest/ % change in level of revenue	n/a	0.4	0.1	(0.1)	(0.3)
Free cash flow	(£26.1m)	£0.5m	£24.9m	£69.0m	£80.6m
Surplus/(deficit) of Spend to Save to operating costs efficiency targets	(£8.5m)	(£9.8m)	£14.6m	(£32.2m)	(£47.1m)

Table 36.16: Financial ratios

	2001–02	2002–03	2003–04	2004–05	2005–06
Free cash flow cover of interest	(0.4)	0.0	0.4	1.1	1.3
Total Base operating costs to revenue	47.8%	37.8%	33.8%	30.0%	29.8%
Return on current cost assets (after exceptional items)	7.8%	9.1%	8.8%	11.6%	11.4%
Average asset life (years)	25	22	19	19	19

My revenue caps are sufficient to ensure that West of Scotland Water Authority can meet the public expenditure constraints. I have assessed my recommended revenue gaps to ensure that there is a margin between the allowable public expenditure and actual need. This reflects both a need for prudence in setting revenue caps when large efficiencies are required and the need to safeguard future capacity to borrow in order to protect customers from any major shocks.

The level of debt is growing less quickly than revenue in each year of the review period. This is demonstrated by the ratio ‘% change in level of interest / % change in level of revenue’ in Table 36.15 where the ratio is less than one. The free cash flow increases throughout the period and is sufficient in 2004-05 to reduce the actual outstanding debt. The surplus in 2003-04 of the Spend to Save allowance over the operating cost efficiency target indicates the prudent approach, which I have taken towards phasing the targets and the costs of achieving the efficiency target. The weighted average cost of debt is decreasing. This results from the lower cost of new debt.

I believe that a sustainable industry is ensured by closely monitoring the ratio of the free cash flow to the interest charge. This should ideally be about 1.5 as at this level a business with a highly predictable cash flow (such as a utility) should be able to withstand any operational or legislative shocks. I expect good progress towards this target will be made within this regulatory period. In the future I would plan on keeping this ratio at about 1.5 and this should ensure that we can keep customer charge increases to the absolute minimum.

The return on average current cost net assets exceeds the targeted rate of 6.0% in each year of the Review period. The cumulative return also exceeds the targeted 6.5% in each year.

The depreciation lives of non-infrastructure assets are set at a reasonably prudent level resulting in an overall useful life of between 19 and 25 years.

Section 7: Chapter 37

Assessment of Revenue Cap: Risk Analysis (For the Existing Three Authorities)

a) Background

The Minister's commissioning letter for this Review asked me to carry out a formal risk analysis. The analysis set out in this chapter presupposes that the merger into Scottish Water does not proceed.

My analysis focuses on the likelihood of the three authorities failing to comply with the Resource Accounting Budget allowed by the Scottish Executive, and with my recommended reallocation of this budget between the three authorities. This risk analysis is important because it provides a higher level of confidence in the projections than a simple sensitivity analysis. This analysis allows me to take account of all the major risk factors at the same time.

In particular, I examine how under- or over-performance of my efficiency targets for operating and capital expenditure might affect compliance with budgets. I quantify the chances that the authorities will not exceed the public expenditure constraint set in the commissioning letter, and my recommended reallocation. I could quantify the risk to customers' bills or delays to the investment programme in the same way, but these are effectively different manifestations of the same risk – the risk that the public expenditure constraint is breached. My analysis, therefore, attempts to determine, as objectively as possible, the degree of this risk.

In carrying out my Review, I have made many assumptions, which are discussed in previous chapters. The most material of these, in their impact on the financial results, are the efficiency targets. My assumptions on depreciation, inflation and potential merger savings are also material, but of a lower order, and I have therefore not analysed these in as much detail. My assumption on depreciation does potentially impact the performance of the authorities in relation to their resource budgets, but it is wholly controllable. It is therefore a risk that the management and boards of the authorities can control.

My assumption of capital expenditure inflation is lower than the retail price index. The impact of capital expenditure inflation increasing to RPI is approximately £5-10 million for each authority by the final year of the regulatory period. This is significant, but it is not material relative to other risks. I believe that this inflation rate in Scotland is likely to continue to run

below the UK average and therefore that my estimate is likely to be broadly correct. I believe that the conservative assumptions made in assessing the efficiency targets are likely to lead to a far greater variability in outcome. 10% of the efficiency targets is nearly double the total inflation rate risk.

My risk analysis for the three authorities is based on a single scenario for progress towards meeting my efficiency targets. I believe this scenario covers the potential range of outcomes that I regard as plausible. To distinguish it from the Scottish Water scenarios A, B and C, I shall refer to it as Scenario D.

i) Scenario D

This scenario covers a wide range of outcomes, driven mainly by the degree of commitment within the authorities to achieving efficiencies. Unlike Scottish Water, where there are three distinct scenarios, I consider that in the three authority model, the degree of commitment can best be represented by a smooth spectrum of risk. I have adopted identical profiles for operating cost and capital expenditure, as shown below: I find no compelling reason to suppose that the risk profiles should be skewed in any way. I believe, therefore, that a Normal distribution seems most appropriate. I have quantified the risk profiles for Scenario D, as shown in Table 37.1.

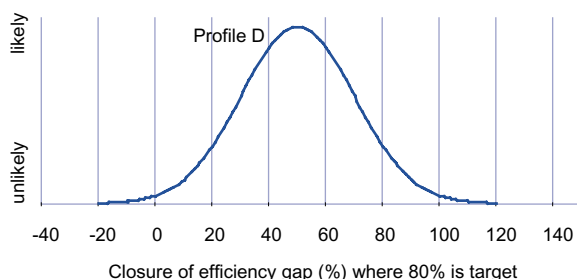
Table 37.1: Assumed mean and standard deviation of risk profiles for operating and capital efficiencies – three authority case

	Profile D
Distribution	Normal
Mean closure of efficiency gap (%)	Operating expenditure: 50 Capital expenditure: 50
Standard deviation	20

The profile is illustrated in Figure 37.1.

My assumed risk profile covers a very wide range of possible outcomes. This is clearly demonstrated in the graph. I am therefore confident that I have covered the plausible scope for uncertainty in my Review.

Figure 37.1: Assumed risk profile for operating and capital expenditure



b) Analysis

I have used the above profiles in a standard risk analysis software package. I assessed the combinations shown in Table 37.2.

The choice of dependent and independent profiles reflects whether the risk of under- or over-performance in operating cost efficiency and capital cost efficiency has a common cause (dependent), or alternatively is independent. In my view, there is a low degree of dependence. I have, however, looked at both assumptions.

c) Results

I have calculated the risk that each authority exceeds its public expenditure constraint in each year of the review period.

The most likely outcome is the 50% probability point. I show the corresponding level of public expenditure and compare it to the

public expenditure constraint. A negative number means that the constraint is exceeded.

The best outcome is the lower 5% probability point. I show the corresponding level of public expenditure and compare it to the public expenditure constraint.

The worst outcome is the higher 5% probability point. I show the corresponding level of public expenditure and compare it to the public expenditure constraint.

I present detailed results in Appendix D. The main findings are summarised in the sections that follow, for each authority. I examine the risks assuming both the Scottish Executive public expenditure allowance (which I call RAB A) and my recommended alternative allowance (RAB B) for the three authorities.

I have calculated outcomes for public expenditure for each authority, and their risk profiles, for each year 2002-03 to 2005-06 in the tables which follow.

I have also drawn out the key points of the risk analysis within the figures which follow (for full details see Appendix D), they show:

- The cumulative risk profile against the public expenditure constraint for a selected year. I have combined operating cost and capital expenditure efficiency targets, and assumed they are dependent.
- The minimum margin between the likely outcome and the public expenditure constraint, and the associated risk levels, for each of the four years of the review period. I have

Table 37.2: Combinations of risks considered in the analysis

Risks considered	Dependency
Operating cost scenario D only	Assumes no risk in achieving the target for capital expenditure
Capital expenditure scenario D only	Assumes no risk in achieving the target for operating expenditure
Operating cost and capital expenditure scenario D	Dependent
Operating cost and capital expenditure scenario D	Independent

again combined the operating cost and capital expenditure efficiency target and assumed that they are dependent.

i) East of Scotland Water Authority

Table 37.3 and 37.4 which follow detail the risk analysis under RAB A and RAB B public expenditure allowances respectively.

Table 37.3: Summary of risk analysis on public expenditure constraint for East of Scotland Water Authority, assuming Scottish Executive public expenditure allowance (RAB A)

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB A	Most likely outcome	Margin RAB A	5% chance that public expenditure is below:	Margin RAB A	% chance of exceeding RAB A limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£69m	£18m	£60m	£27m	£51m	£36m	<0.1%
2003–04	£85m	(£2m)	£74m	£9m	£64m	£19m	8%
2004–05	£66m	£17m	£54m	£29m	£43m	£40m	<0.1%
2005–06	£76m	£7m	£64m	£19m	£52m	£31m	0.5%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£76m	£11m	£60m	£27m	£44m	£43m	0.3%
2003–04	£94m	(£11m)	£74m	£9m	£55m	£28m	23%
2004–05	£76m	£7m	£54m	£29m	£33m	£50m	2%
2005–06	£89m	(£6m)	£64m	£19m	£39m	£44m	11%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£85m	£2m	£60m	£27m	£35m	£52m	4%
2003–04	£103m	(£20m)	£74m	£9m	£45m	£38m	31%
2004–05	£87m	(£4m)	£54m	£29m	£22m	£61m	7%
2005–06	£102m	(£19m)	£64m	£19m	£26m	£57m	20%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£79m	£8m	£60m	£27m	£41m	£46m	0.8%
2003–04	£96m	(£13m)	£74m	£9m	£53m	£30m	25%
2004–05	£79m	£4m	£54m	£29m	£30m	£53m	3%
2005–06	£92m	(£9m)	£64m	£19m	£36m	£47m	13%

Notes: Public expenditure outcomes that exceed budget shown in bold type.
Risks greater than one percent are rounded to the nearest percent.

Table 37.4: Summary of risk analysis on public expenditure constraints for East of Scotland Water Authority, assuming recommended public expenditure allowance (RAB B)

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB B	Most likely outcome	Margin RAB B	5% chance that public expenditure is below:	Margin RAB B	% chance of exceeding RAB B limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£69m	£8m	£60m	£17m	£51m	£26m	<0.1%
2003–04	£79m	(£3m)	£69m	£7m	£59m	£16m	14%
2004–05	£41m	(£1m)	£30m	£10m	£20m	£20m	7%
2005–06	£52m	(£3m)	£41m	£9m	£29m	£21m	10%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£76m	£1m	£60m	£17m	£44m	£33m	4%
2003–04	£88m	(£12m)	£69m	£7m	£50m	£25m	28%
2004–05	£52m	(£12m)	£30m	£10m	£9m	£31m	23%
2005–06	£66m	(£16m)	£41m	£9m	£16m	£34m	27%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£84m	(£7m)	£60m	£17m	£36m	£41m	12%
2003–04	£97m	(£22m)	£69m	£7m	£41m	£35m	35%
2004–05	£62m	(£22m)	£30m	£10m	(£1m)	£41m	31%
2005–06	£77m	(£27m)	£41m	£9m	£5m	£45m	34%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£78m	(£1m)	£60m	£17m	£42m	£35m	6%
2003–04	£90m	(£15m)	£69m	£7m	£48m	£28m	31%
2004–05	£54m	(£14m)	£30m	£10m	£7m	£33m	25%
2005–06	£68m	(£18m)	£41m	£9m	£14m	£36m	29%

Notes: Public expenditure outcomes that exceed budget are shown in bold type.
Risks greater than one percent are rounded to the nearest percent.

The results in Table 37.3 (RAB A) show that the chances of the Scottish Executive public expenditure constraint being exceeded are significant for Scenario D (operating cost efficiencies and capital cost efficiencies combined, dependently), being an estimated 31% in 2003-04.

The results in Table 37.4 (RAB B) show that the chances of my recommended public expenditure constraint being exceeded are significant for Scenario D (operating and capital cost efficiencies combined), being an estimated 35% in 2003-04, assuming that these efficiencies are dependent. There is a 5% chance that the shortfall could exceed £27m in 2005-06, on the same assumption.

Figure 37.2 and 37.3 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB A public expenditure allowance.

Figure 37.2: Cumulative risk profile for public expenditure (RAB A), operating & capital cost efficiencies dependent – East, Profile D – 2003-04

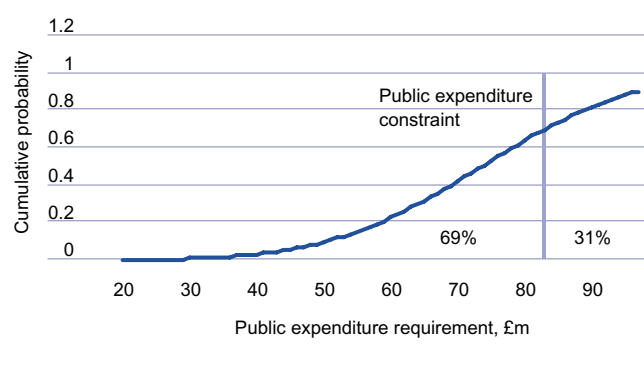


Figure 37.3: Minimum projected margin on public expenditure (RAB A), operating & capital cost efficiencies dependent – East, Profile D

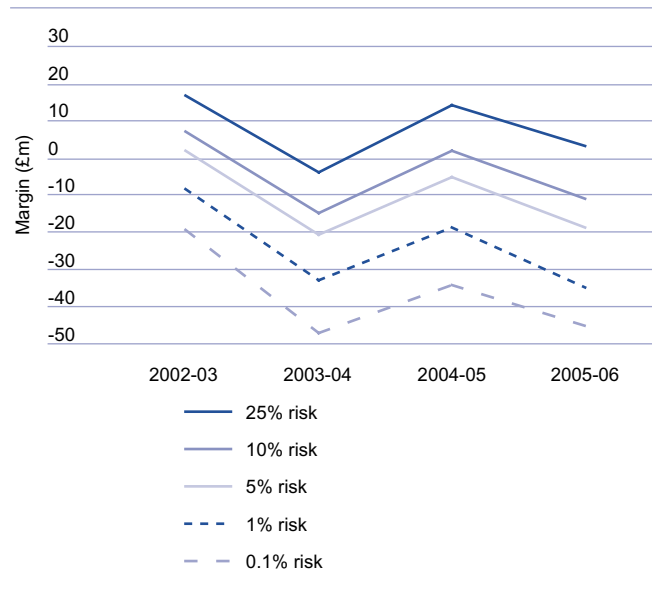


Figure 37.4 and 37.5 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB B public expenditure allowance.

Figure 37.4: Cumulative risk profile for public expenditure (RAB B), operating & capital cost efficiencies – dependent - East, Profile D 2003-04

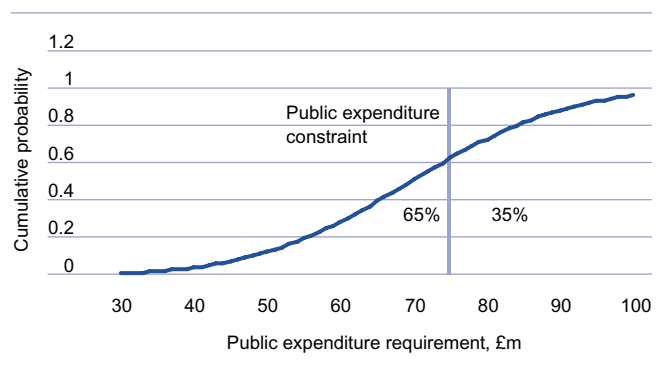
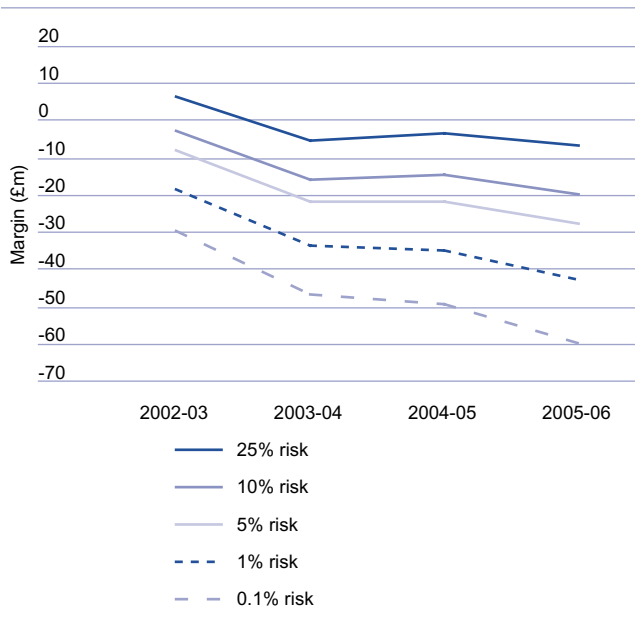


Figure 37.5: Minimum projected margin on public expenditure (RAB B), operating & capital cost efficiencies – dependent - East Profile D



ii) North of Scotland Water Authority

Table 37.5 and 37.6 which follow detail the risk analysis under RAB A and RAB B under public expenditure allowances respectively.

Table 37.5: Summary of risk analysis on public expenditure constraints for North of Scotland Water Authority, assuming Scottish Executive public expenditure allowance (RAB A)

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB A	Most likely outcome	Margin RAB A	5% chance that public expenditure is below:	Margin RAB A	% chance of exceeding RAB A limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£119m	(£2m)	£109m	£8m	£99m	£18m	9%
2003–04	£110m	£1m	£98m	£13m	£87m	£24m	3%
2004–05	£112m	(£1m)	£100m	£11m	£87m	£24m	6%
2005–06	£102m	£9m	£89m	£22m	£76m	£35m	0.3%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£132m	(£15m)	£109m	£8m	£86m	£31m	29%
2003–04	£120m	(£9m)	£98m	£13m	£77m	£34m	17%
2004–05	£132m	(£20m)	£100m	£11m	£68m	£43m	28%
2005–06	£120m	(£9m)	£89m	£22m	£59m	£53m	12%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£143m	(£26m)	£109m	£8m	£75m	£42m	35%
2003–04	£132m	(£21m)	£98m	£13m	£64m	£47m	27%
2004–05	£145m	(£34m)	£100m	£11m	£54m	£57m	34%
2005–06	£135m	(£23m)	£89m	£22m	£44m	£67m	21%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£134m	(£17m)	£109m	£8m	£84m	£33m	30%
2003–04	£123m	(£12m)	£98m	£13m	£74m	£37m	20%
2004–05	£134m	(£23m)	£100m	£11m	£66m	£45m	29%
2005–06	£122m	(£11m)	£89m	£22m	£56m	£55m	14%

Notes: Public expenditure outcomes that exceed budget are shown in bold type.

Risks greater than one percent are rounded to the nearest percent.

Table 37.6: Summary of risk analysis on recommended public expenditure constraint for North of Scotland Water Authority (RAB B)

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB B	Most likely outcome	Margin RAB B	5% chance that public expenditure is below:	Margin RAB B	% chance of exceeding RAB B limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£130m	£7m	£120m	£16m	£110m	£26m	0.3%
2003–04	£106m	£12m	£95m	£24m	£84m	£35m	<0.1%
2004–05	£149m	(£4m)	£137m	£8m	£124m	£21m	13%
2005–06	£134m	(£1m)	£120m	£13m	£107m	£26m	6%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£143m	(£6m)	£120m	£16m	£97m	£39m	12%
2003–04	£116m	£2m	£95m	£24m	£74m	£45m	3%
2004–05	£168m	(£23m)	£137m	£8m	£105m	£40m	33%
2005–06	£151m	(£18m)	£120m	£13m	£90m	£43m	25%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£153m	(£16m)	£120m	£16m	£87m	£49m	20%
2003–04	£128m	(£9m)	£95m	£24m	£62m	£56m	12%
2004–05	£181m	(£36m)	£137m	£8m	£93m	£52m	38%
2005–06	£164m	(£31m)	£120m	£13m	£77m	£56m	32%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£145m	(£8m)	£120m	£16m	£95m	£41m	14%
2003–04	£119m	(£1m)	£95m	£24m	£71m	£48m	5%
2004–05	£171m	(£25m)	£137m	£8m	£103m	£42m	34%
2005–06	£153m	(£20m)	£120m	£13m	£87m	£46m	26%

Notes: Public expenditure outcomes that exceed budget are shown in bold type.

Risks greater than one percent are rounded to the nearest percent.

The results in Table 37.5 show that the chances of the Scottish Executive public expenditure constraint being exceeded are significant for Scenario D (operating and capital efficiencies combined, dependently), being an estimated 35% in 2002-03.

The results in Table 37.6 show that the chances of my recommended public expenditure constraint being exceeded are significant for Scenario D (operating and capital efficiencies combined, dependently), being an estimated 38% in 2004-05. There is a 5% chance that the shortfall could exceed £36m in 2004-05, again assuming these efficiencies are dependent.

Figures 37.6 and 37.7 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB A public expenditure allowance.

Figure 37.6: Cumulative risk profile for public expenditure (RAB A), operating & capital cost efficiencies – dependent – North, Profile D – 2002-03

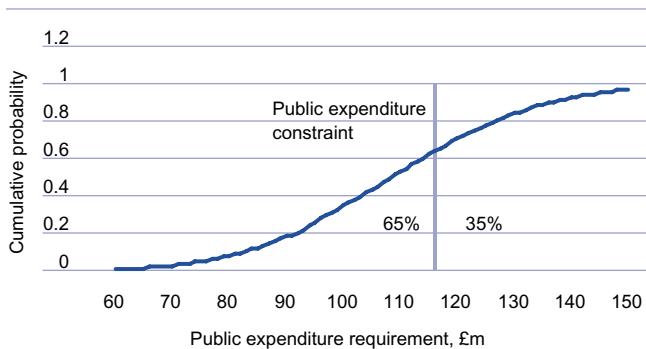
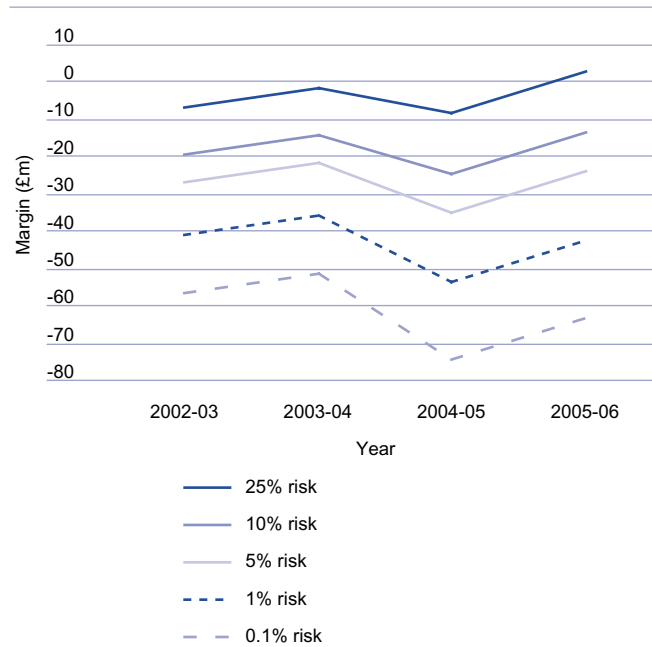


Figure 37.7: Minimum projected margin on public expenditure (RAB A), operating & capital cost efficiencies – dependent – North, Profile D



Figures 37.8 and 37.9 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB B public expenditure allowance.

Figure 37.8: Cumulative risk profile for public expenditure (RAB B), operating & capital cost efficiencies – dependent – North, Profile D – 2004-05

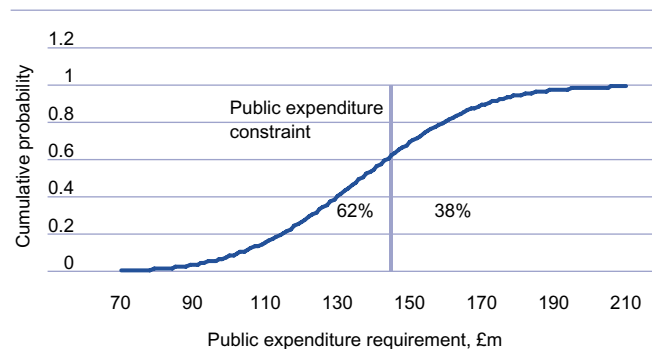
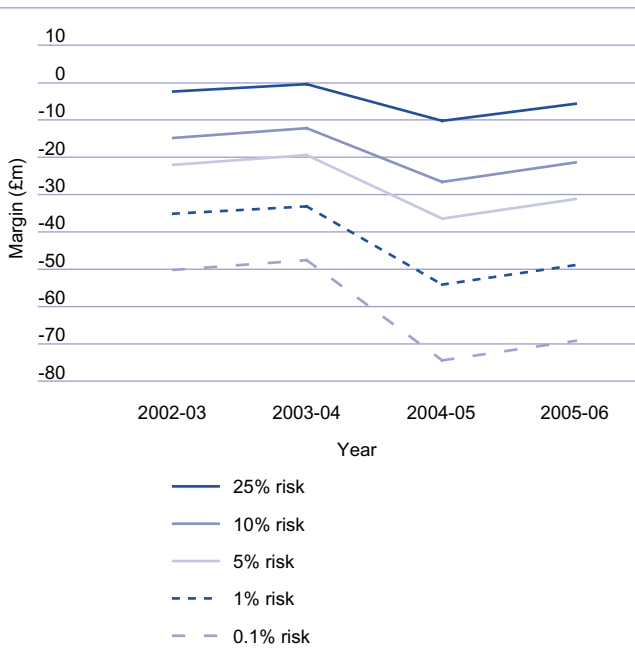


Figure 37.9: Minimum projected margin on public expenditure (RAB B), operating & capital cost efficiencies - dependent – North, Profile D



iii) West of Scotland Water Authority

Table 37.7 and 37.8 which follow detail the risk analysis under RAB A and RAB B public expenditure allowances respectively.

Table 37.7 Summary of risk analysis on public expenditure constraint for West of Scotland Water Authority, assuming Scottish Executive public expenditure allowance (RAB A).

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB A	Most likely outcome	Margin RAB A	5% chance that public expenditure is below:	Margin RAB A	% chance of exceeding RAB A limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£99m	£11m	£77m	£34m	£54m	£57m	0.7%
2003–04	£120m	(£14m)	£94m	£12m	£68m	£38m	22%
2004–05	£120m	(£15m)	£92m	£13m	£64m	£41m	22%
2005–06	£121m	(£15m)	£90m	£15m	£60m	£46m	20%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£99m	£11m	£77m	£34m	£54m	£57m	0.8%
2003–04	£121m	(£15m)	£94m	£12m	£66m	£39m	23%
2004–05	£132m	(£26m)	£92m	£13m	£53m	£53m	29%
2005–06	£133m	(£27m)	£90m	£15m	£48m	£58m	28%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£123m	(£12m)	£77m	£34m	£31m	£80m	11%
2003–04	£147m	(£41m)	£94m	£12m	£40m	£65m	36%
2004–05	£160m	(£55m)	£92m	£13m	£24m	£81m	37%
2005–06	£163m	(£58m)	£90m	£15m	£17m	£89m	36%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£110m	£1m	£77m	£34m	£44m	£67m	5%
2003–04	£132m	(£26m)	£94m	£12m	£55m	£50m	30%
2004–05	£141m	(£36m)	£92m	£13m	£43m	£62m	33%
2005–06	£143m	(£38m)	£90m	£15m	£37m	£68m	32%

Notes: Public expenditure outcomes that exceed budget are shown in bold type.

Risks greater than one percent are rounded to the nearest percent.

Table 37.8: Summary of risk analysis on public expenditure constraint for West of Scotland Water Authority, assuming recommended public expenditure allowance (RAB B).

RISK PROFILE	5% chance that public expenditure exceeds:	Margin RAB B	Most likely outcome	Margin RAB B	5% chance that public expenditure is below:	Margin RAB B	% chance of exceeding RAB B limit
OPERATING COST EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£99m	£1m	£77m	£24m	£54m	£47m	4%
2003–04	£120m	(£14m)	£94m	£12m	£68m	£38m	22%
2004–05	£130m	(£15m)	£102m	£13m	£73m	£41m	22%
2005–06	£133m	(£16m)	£102m	£15m	£71m	£46m	21%
CAPITAL EXPENDITURE EFFICIENCY TARGET ONLY							
Profile D							
2002–03	£99m	£1m	£77m	£24m	£54m	£47m	5%
2003–04	£121m	(£15m)	£94m	£12m	£66m	£39m	23%
2004–05	£141m	(£26m)	£102m	£13m	£62m	£52m	29%
2005–06	£144m	(£27m)	£102m	£15m	£60m	£57m	28%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Dependent							
Profile D							
2002–03	£123m	(£22m)	£77m	£24m	£31m	£70m	20%
2003–04	£147m	(£41m)	£94m	£12m	£40m	£65m	36%
2004–05	£169m	(£55m)	£102m	£13m	£34m	£81m	38%
2005–06	£175m	(£58m)	£102m	£15m	£29m	£88m	37%
OPERATING COST AND CAPITAL EXPENDITURE EFFICIENCY TARGETS Independent							
Profile D							
2002–03	£110m	(£9m)	£77m	£24m	£44m	£57m	12%
2003–04	£132m	(£26m)	£94m	£12m	£55m	£50m	30%
2004–05	£151m	(£36m)	£102m	£13m	£52m	£62m	33%
2005–06	£155m	(£38m)	£102m	£15m	£49m	£68m	32%

Notes: Public expenditure outcomes that exceed budget are shown in bold type.
Risks greater than one percent are rounded to the nearest percent.

The results in Table 37.7 (RAB A) show that the chances of the public expenditure constraint being exceeded are significant for Scenario D (operating and capital efficiencies combined, dependently), being an estimated 37% in 2004-05. There is a 5% chance that the shortfall could exceed £58m in 2005-06, again assuming dependencies in these efficiencies.

The results in Table 37.8 (RAB B) show that the chances of my recommended public expenditure constraint being exceeded are significant for Scenario D (operating and capital efficiencies combined, dependently), being an estimated 38% in 2004-05. There is a 5% chance that the shortfall could exceed £58m in 2005-06, again assuming dependencies in these efficiencies.

Figure 37.10 and 37.11 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB A public expenditure allowance.

Figure 37.10: Cumulative risk profile for public expenditure (RAB A), operating & capital cost efficiencies – dependent – West, Profile D 2004-05

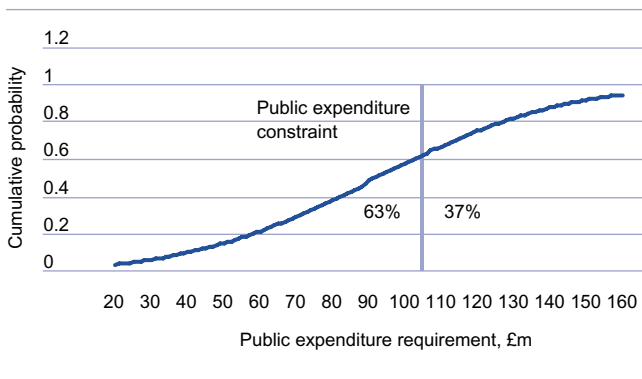


Figure 37.11 Minimum projected margin on public expenditure (RAB A), operating & capital cost efficiencies – dependent – West, Profile D

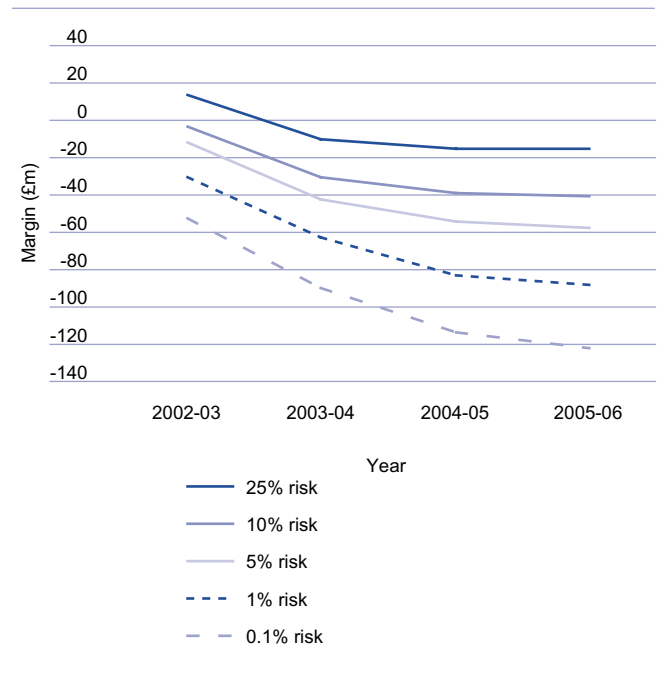


Figure 37.12 and 37.13 show the cumulative risk profile for public expenditure and the minimum projected margin on public expenditure respectively under RAB B public expenditure allowance.

Figure 37.12: Cumulative risk profile for public expenditure (RAB B), operating & capital cost efficiencies – dependent – West, Profile D 2004-05

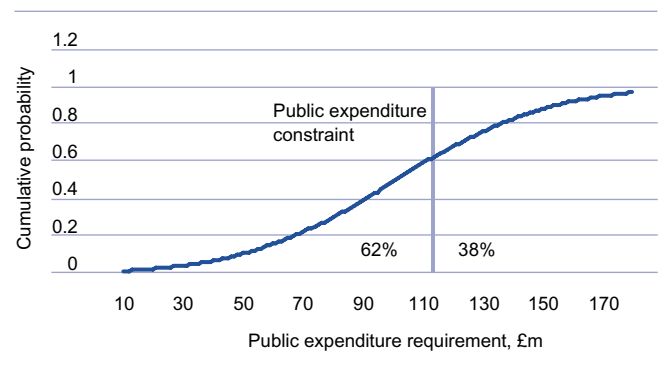
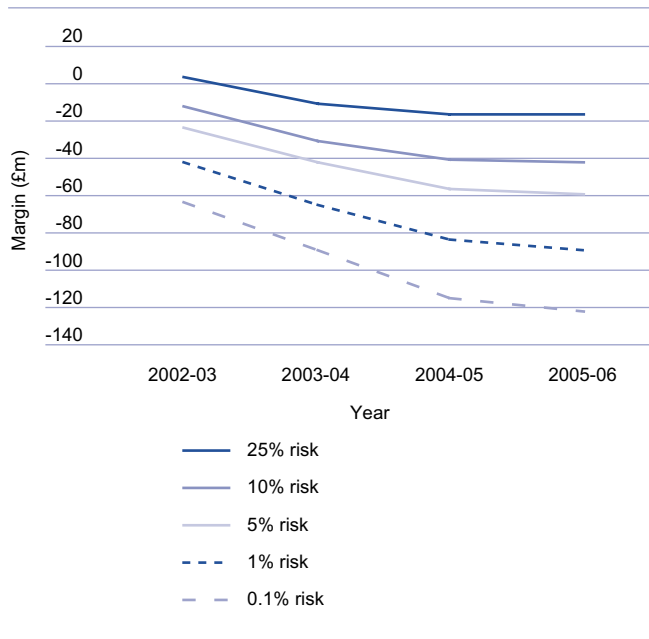


Figure 37.13: Minimum projected margin on public expenditure (RAB B) Operating & capital cost efficiencies - dependent West, Profile D



d) Conclusion

I have conducted a very thorough risk analysis of the results of my financial model and the most critical assumptions that I have made. My risk analysis shows that there exists a real possibility that public expenditure constraints could be breached if the merger of the three authorities does not proceed. The key success criterion is the achievement of efficiency targets. Revenue increases will not ultimately solve the problem and will undermine, probably fatally, the public sector model.

Section 7: Chapter 38

Assessment of Revenue Cap: Profile of Bills

a) Introduction

This chapter outlines the impact on domestic water and sewerage bills as a result of the revenue caps recommended in this Review. There are seven potential scenarios:

- The proposal to establish Scottish Water is approved by the Scottish Parliament,
- East of Scotland Water Authority continues to operate with current proportion of public expenditure,
- East of Scotland Water Authority continues with revised proportion of public expenditure,
- North of Scotland Water Authority continues with current proportion of public expenditure,
- North of Scotland Water Authority continues with revised proportion of public expenditure,
- West of Scotland Water Authority continues with current proportion of public expenditure,
- West of Scotland Water Authority continues with revised proportion of public expenditure.

The chapter closes with a comparison of the outlook for domestic bills under these scenarios with the likely average domestic bills in England and Wales.

b) Assumptions

The revenue caps for all these scenarios are consistent with the public expenditure constraints in the commissioning letter that I received from the Minister. In that letter, the Minister asked that I assume that, in the event that Scottish Water does not proceed, I set revenue caps based on the previous year's split of public expenditure between the three authorities. The implications for domestic prices are shown.

My risk analysis has highlighted, however, that changing the proportions of public expenditure allocated to the three authorities would improve the chances that public expenditure limits were not breached, would smooth the impact of price increases and would lead to lower overall prices in the North. I have therefore recommended to the Minister that he accept this revision to the proportion of public expenditure allocated to each authority.

The public expenditure allocation in each option is shown in Table 38.1.

Table 38.1: Allocation of public expenditure

Year	2002–03	2003–04	2004–05	2005–06
Scottish Water	£314.3m	£299.7m	£299.7m	£299.7m
East	£87.1m	£83.1m	£83.1m	£83.1m
East revised	£77.1m	£75.4m	£40.0m	£49.8m
North	£116.5m	£111.1m	£111.1m	£111.1m
North revised	£136.6m	£118.8m	£145.2m	£133.0m
West	£110.6m	£105.5m	£105.5m	£105.5m
West revised	£100.6m	£105.5m	£114.5m	£116.9m

I have also assumed that the balance between water and sewerage charges moves over this review period to reflect the average position in England and Wales. This is appropriate, as the majority of customers will begin to benefit from full secondary treatment of sewage during this period. This does not impact the customers of East of Scotland Water Authority as this rebalancing between water and sewerage was completed last year. Customers with septic tanks, who are not liable to sewerage charges, will benefit from this rebalancing.

c) Scottish Water

I have outlined indicative changes in the Band D household bills and the average household bill. This has been outlined firstly for Scottish Water, taking the average bills across the three authorities and then on an individual authority level, assuming that harmonisation of charges will be completed in 2004-05.

i) Average bills

Figure 38.1: Scottish Water average domestic bills

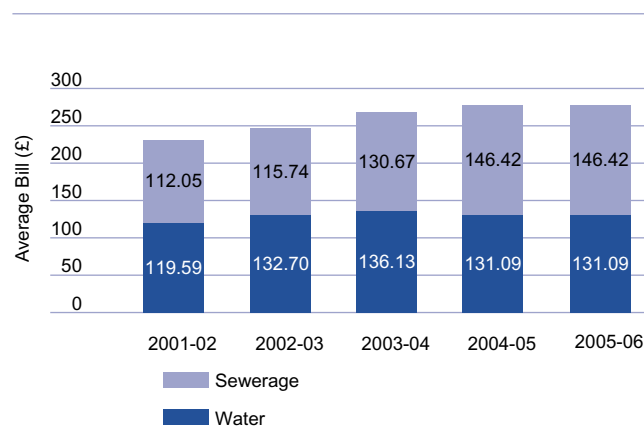
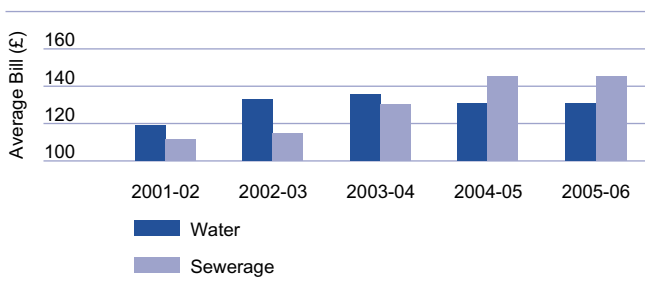


Table 38.2: Percentage increases in average bills: Scottish Water

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	11%	3%	4%	0%	10%
% Increase in average sewerage bill	3%	13%	12%	0%	31%
Total % increase in average bill	7%	7%	4%	0%	20%

Figure 38.2: Scottish Water average bills, water and sewerage split



d) East of Scotland Water Authority: Scottish Water harmonisation

i) Band D bills

Figure 38.3: East of Scotland Water Authority – harmonisation in 2004-05 – Band D bills

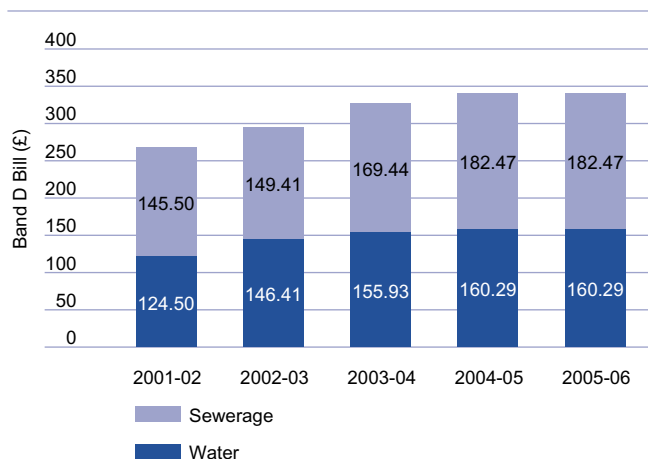


Figure 38.4: East of Scotland Water Authority – harmonisation in 2004-05 – Band D bills, water and sewerage split

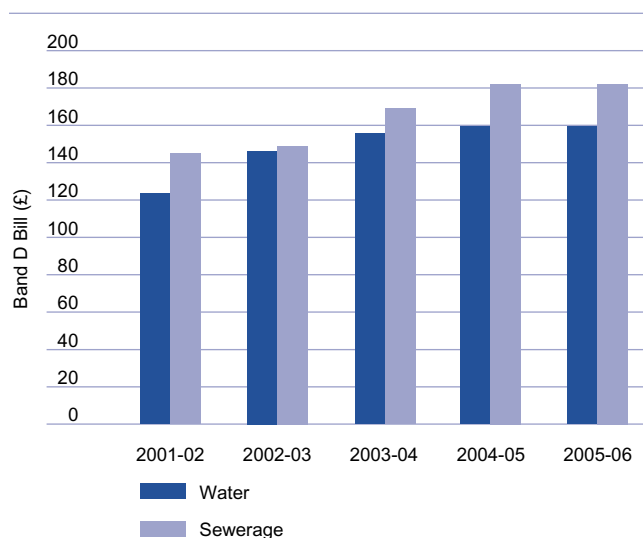


Table 38.3: Percentage increases in Band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	18%	6%	3%	0%	29%
% Increase in Band D sewerage bill	3%	13%	8%	0%	25%
Total % increase in Band D bill	10%	10%	5%	0%	27%

ii) Average bills

Figure 38.5: East of Scotland Water Authority – harmonisation in 2004-05 – average bills

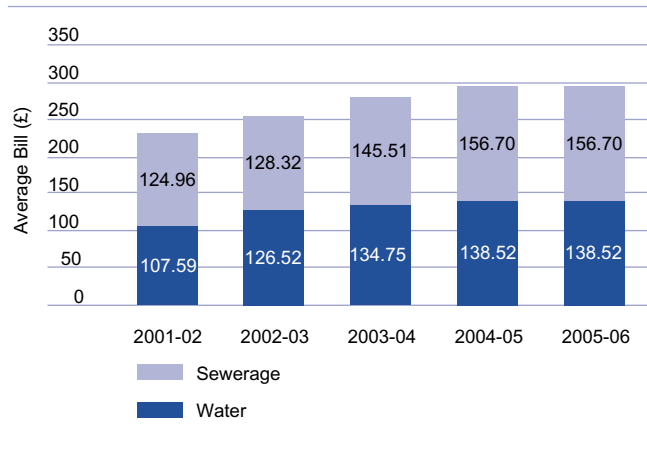
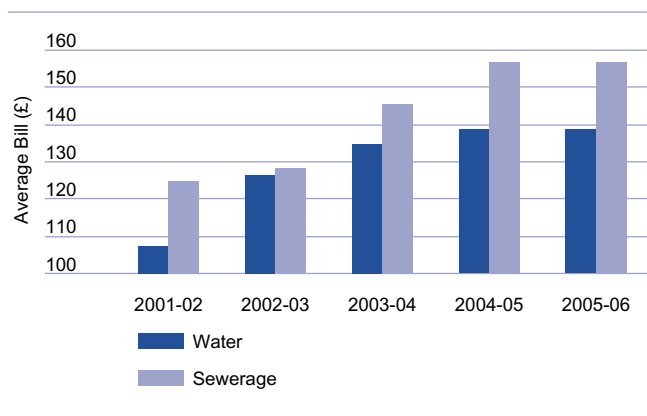


Table 38.4: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	18%	6%	3%	0%	29%
% Increase in average sewerage bill	3%	13%	8%	0%	25%
Total % increase in average bill	10%	10%	5%	0%	27%

Figure 38.6: East of Scotland Water Authority – harmonisation in 2004-05 – average bills, water and sewerage split



e) North of Scotland Water Authority: Scottish Water harmonisation

i) Band D bills

Figure 38.7: North of Scotland Water Authority – harmonisation in 2004-05 – Band D bills

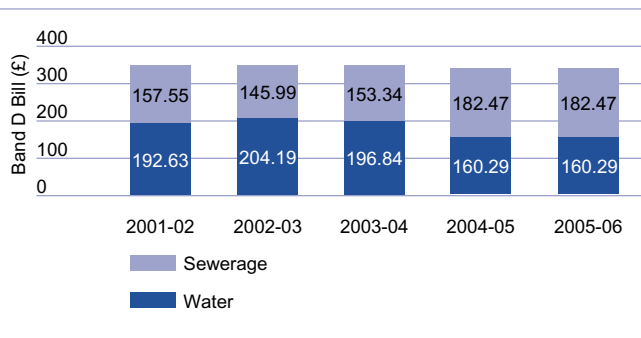
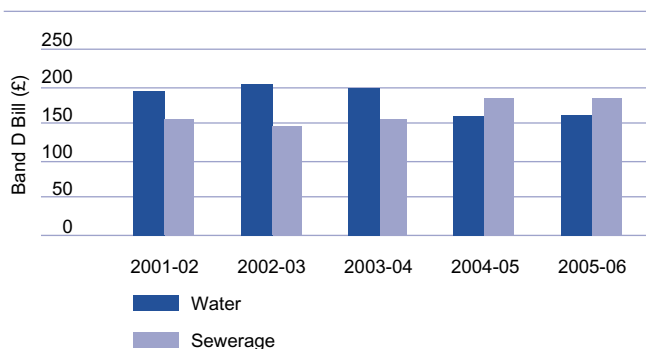


Table 38.5: Percentage increases in Band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	6%	(4%)	(19%)	0%	(17%)
% Increase in Band D sewerage bill	(7%)	5%	19%	0%	16%
Total % increase in Band D bill	0%	0%	(2%)	0%	(2%)

Figure 38.8: North of Scotland Water Authority – harmonisation in 2004-05 – Band D bills, water and sewerage split



i) Average bills

Figure 38.9: North of Scotland Water Authority – harmonisation in 2004-05 – average bills

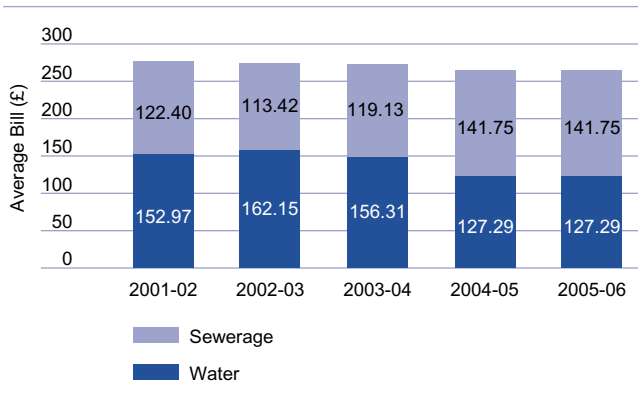
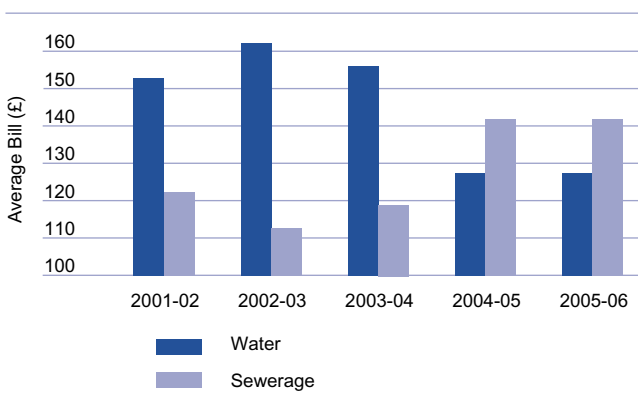


Table 38.6: – Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	6%	(4%)	(19%)	0%	(17%)
% Increase in average sewerage bill	(7%)	5%	19%	0%	16%
Total % increase in average bill	0%	0%	(2%)	0%	(2%)

Figure 38.10: North of Scotland Water Authority – harmonisation in 2004-05 – average bills, water and sewerage split



f) West of Scotland Water Authority: Scottish Water harmonisation

i) Band D bills

Figure 38.11: West of Scotland Water Authority – harmonisation in 2004-05 – Band D bills

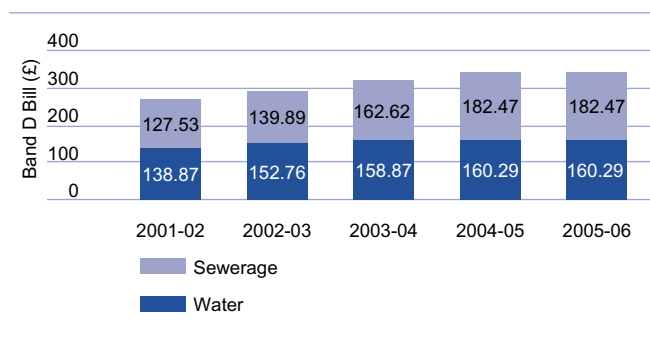
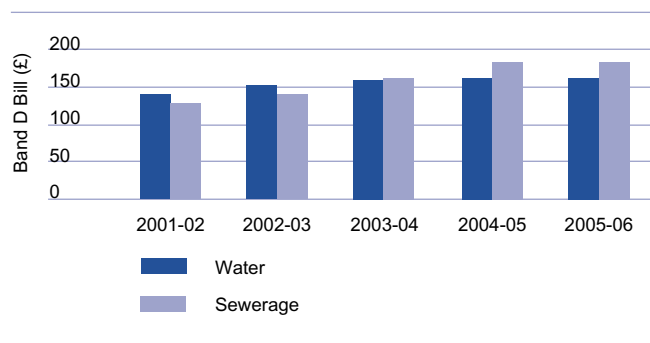


Table 38.7 – Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	10%	4%	1%	0%	15%
% Increase in Band D sewerage bill	10%	16%	12%	0%	43%
Total % increase in Band D bill	10%	10%	7%	0%	29%

Figure 38.12: West of Scotland Water Authority – harmonisation in 2004-05 – Band D bills, water and sewerage split



ii) Average bills

Figure 38.13: West of Scotland Water Authority – harmonisation in 2004-05 – average bills

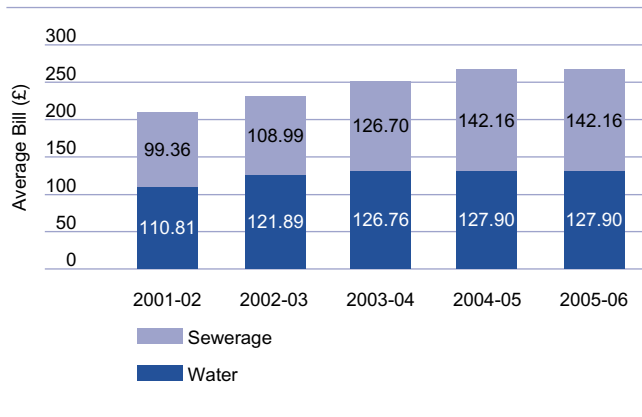
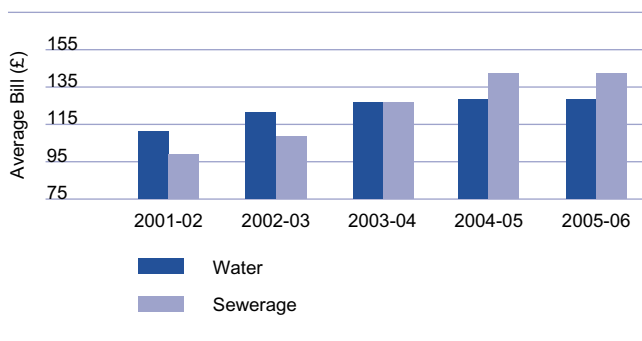


Table 38.8: – Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	10%	4%	1%	0%	15%
% Increase in average sewerage bill	10%	16%	12%	0%	43%
Total % increase in average bill	10%	10%	7%	0%	28%

Figure 38.14: West of Scotland Water Authority – harmonisation in 2004-05 – average bills, water and sewerage split



g) East of Scotland Water Authority (allocation of public expenditure in line with commissioning letter)

The following section gives analysis of the situation should the merger of the three authorities not come to fruition. For the East and North, two possible scenarios have been discussed. One scenario allocates public expenditure in line with the commissioning letter for the Review. The other changes the proportions of public expenditure to improve the chances that public expenditure limits are not breached, to smooth the impact of price increases and to reduce overall prices in the North.

i) Band D Bills

Figure 38.15: East of Scotland Water Authority – original funding allocation – band D bills

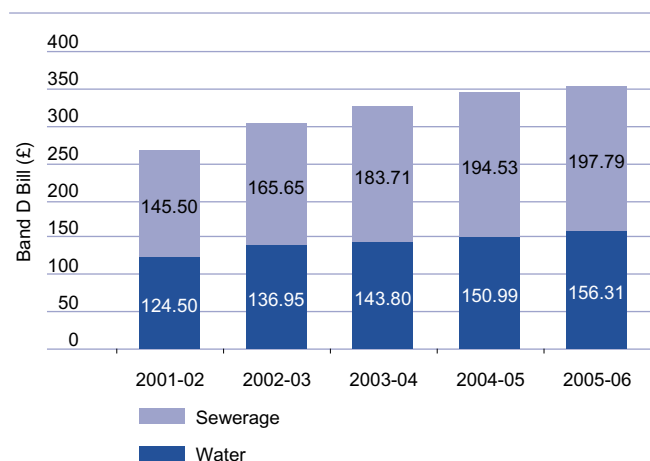


Figure 38.16: East of Scotland Water Authority – original funding allocation – band D bills, water and sewerage split

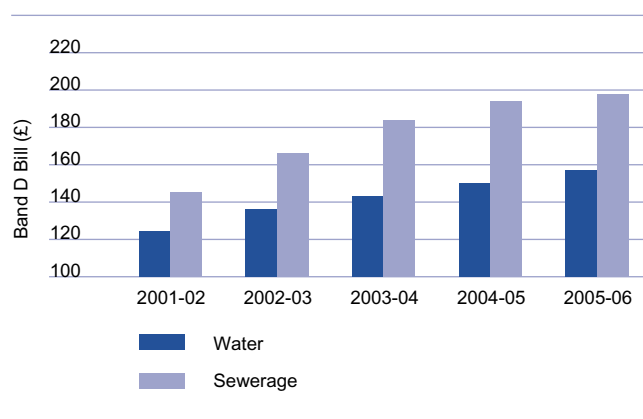


Table 38.9:- Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	10%	5%	5%	4%	26%
% Increase in Band D sewerage bill	14%	11%	6%	2%	36%
Total % increase in Band D bill	12%	8%	5%	2%	31%

ii) Average bills

Figure 38.17: East of Scotland Water Authority – original funding allocation – average bills

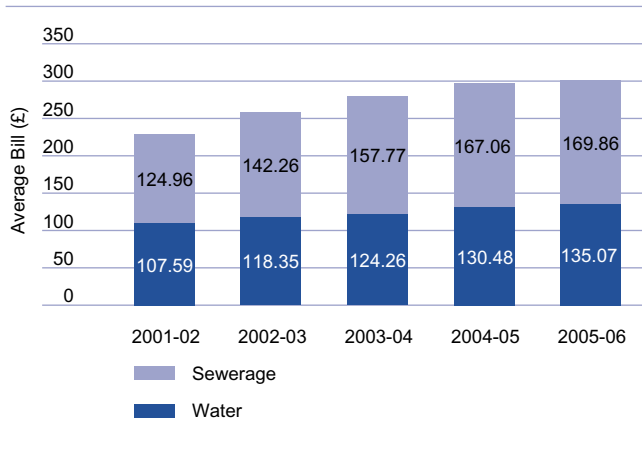
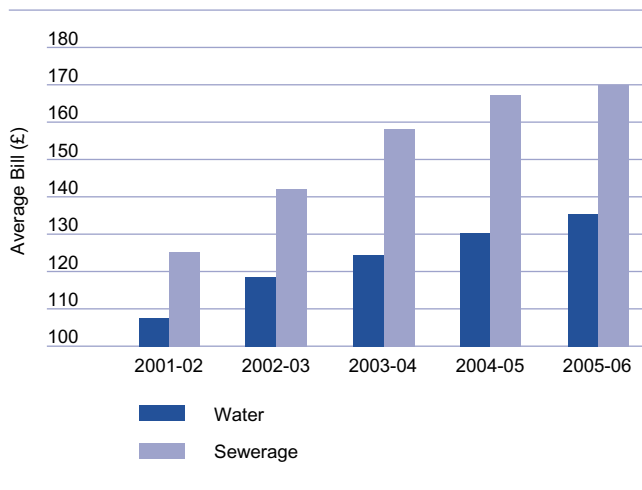


Table 38.10: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	10%	5%	5%	4%	26%
% Increase in average sewerage bill	14%	11%	6%	2%	36%
Total % increase in average bill	12%	8%	5%	2%	31%

Figure 38.18: East of Scotland Water Authority – original funding allocation – average bills, water and sewerage split



h) East of Scotland Water Authority (revised public expenditure allocation)

i) Band D bills

Figure 38.19 East of Scotland Water Authority – revised funding allocation – band D bills

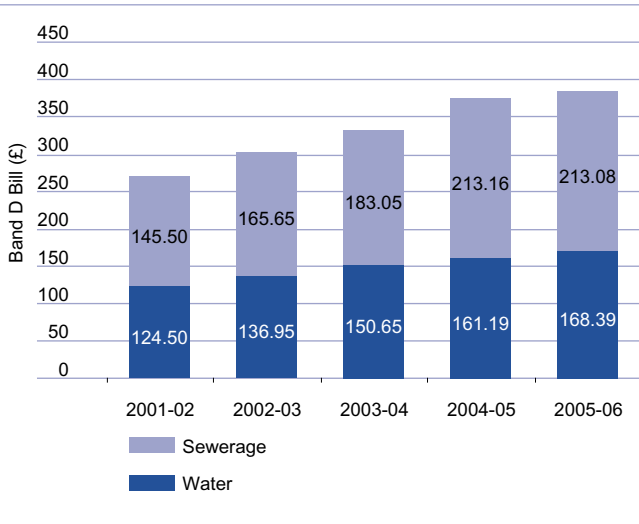
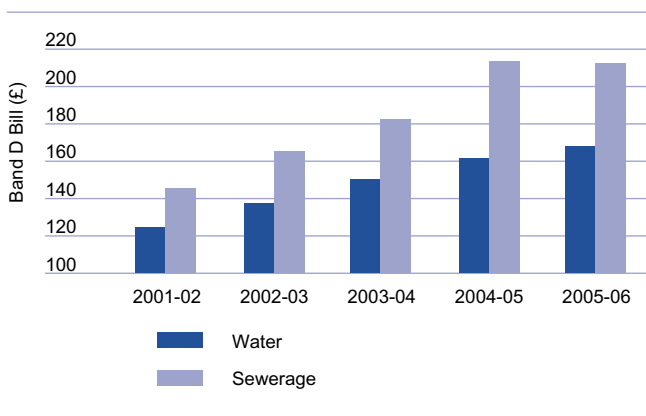


Table 38.11: Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	10%	10%	7%	4%	35%
% Increase in Band D sewerage bill	14%	11%	16%	0%	46%
Total % increase in Band D bill	12%	10%	12%	2%	41%

Figure 38.20: East of Scotland Water Authority – revised funding allocation – band D bills, water and sewerage split



ii) Average bills

Figure 38.21: East of Scotland Water Authority – revised funding allocation – average bills

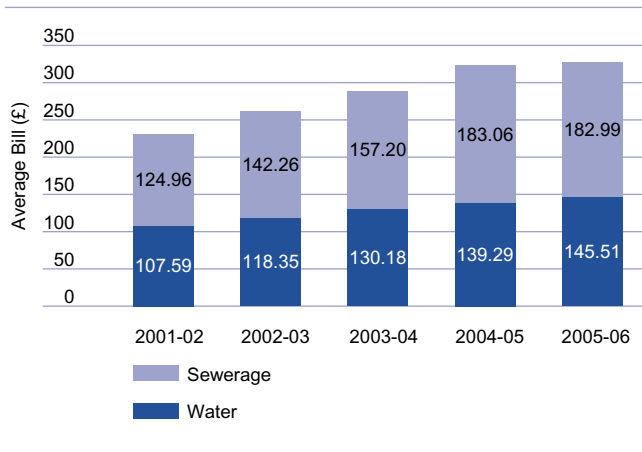
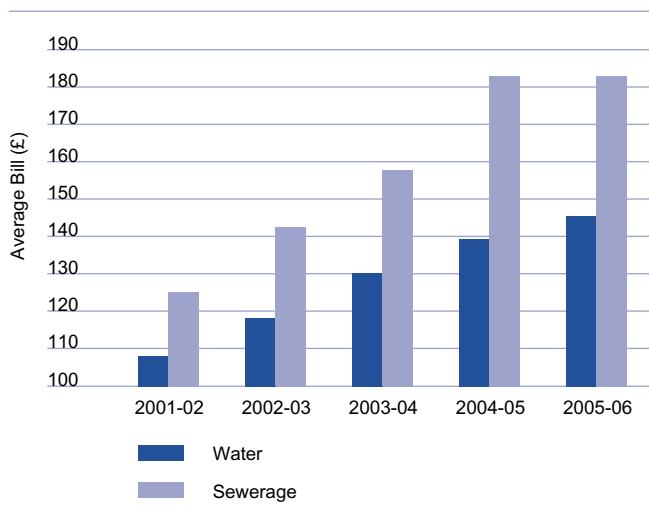


Table 38.12: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	10%	10%	7%	4%	35%
% Increase in average sewerage bill	14%	11%	16%	0%	46%
Total % increase in average bill	12%	10%	12%	2%	41%

Figure 38.22: East of Scotland Water Authority – revised funding allocation – average bills, water and sewerage split



i) North of Scotland Water Authority (allocation of public expenditure in line with commissioning letter)

i) Band D bills

Figure 38.23: North of Scotland Water Authority – original funding allocation – band D bills

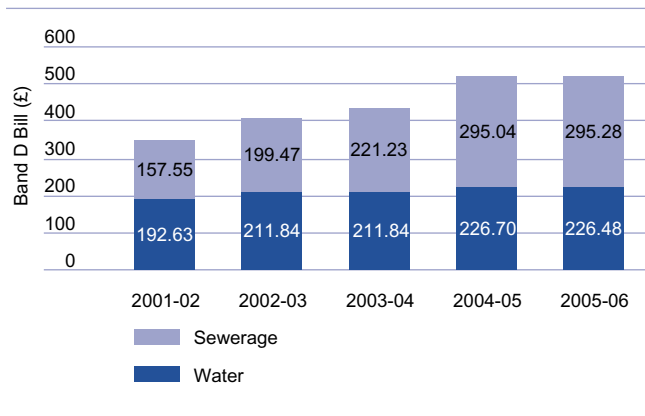
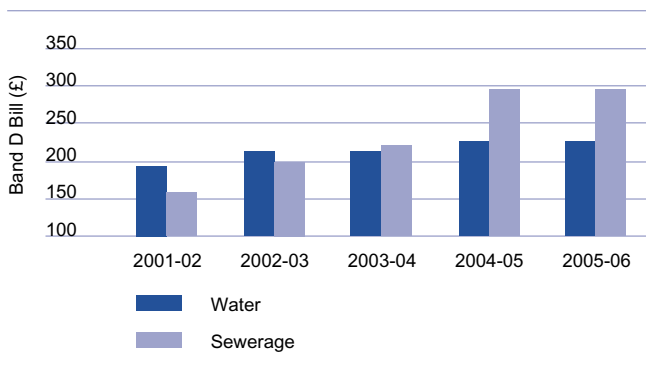


Table 38.13: Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	10%	0%	7%	0%	18%
% Increase in Band D sewerage bill	27%	11%	33%	0%	87%
Total % increase in Band D bill	17%	5%	20%	0%	49%

Figure 38.24: North of Scotland Water Authority – original funding allocation – band D bills, water and sewerage split



ii) Average bills

Figure 38.25: North of Scotland Water Authority – original funding allocation – average bills

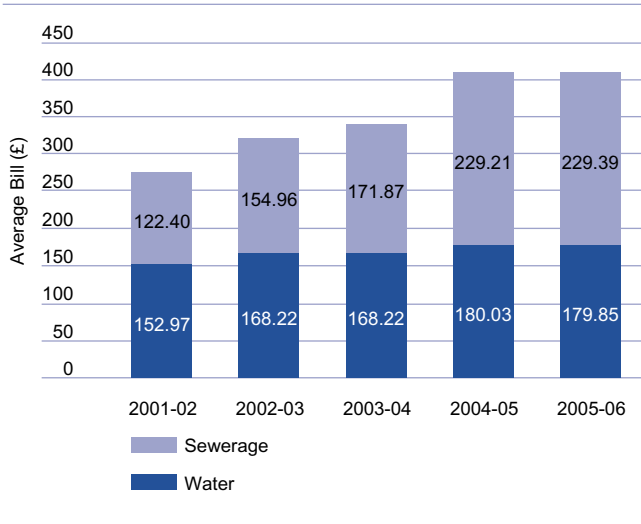
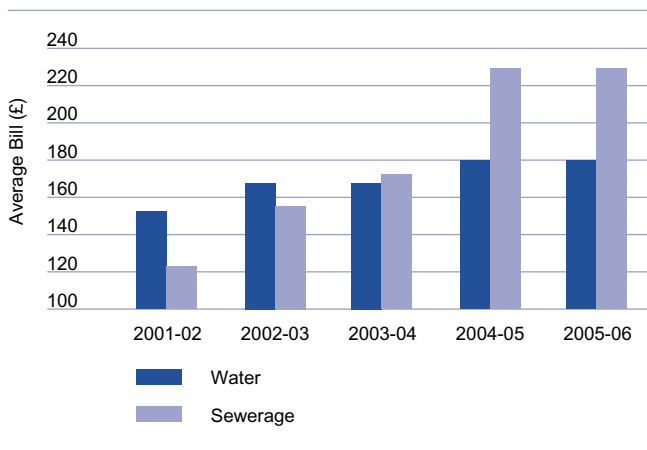


Table 38.14: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	10%	0%	7%	0%	18%
% Increase in average sewerage bill	27%	11%	33%	0%	87%
Total % increase in average bill	17%	5%	20%	0%	49%

Figure 38.26: North of Scotland Water Authority – original funding allocation – average bills, water and sewerage split



j) North of Scotland Water Authority (revised public expenditure allocation)

i) Band D bills

Figure 38.27: North of Scotland Water Authority – revised funding allocation – band D bills

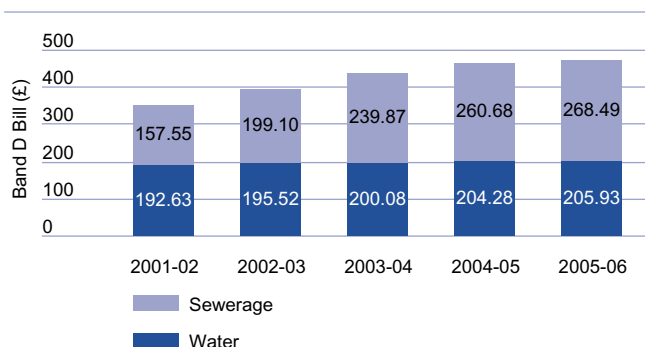
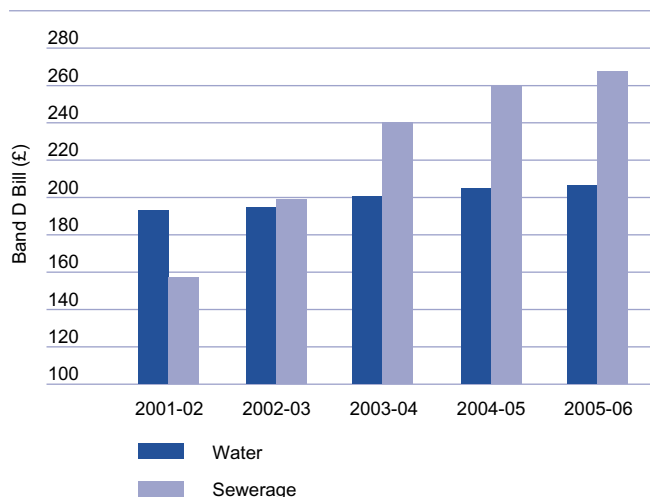


Table 38.15: Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	1%	2%	2%	1%	7%
% Increase in Band D sewerage bill	26%	20%	9%	3%	70%
Total % increase in Band D bill	13%	11%	6%	2%	35%

Figure 38.28: North of Scotland Water Authority – revised funding allocation – band D bills, water and sewerage split



ii) Average bills

Figure 38.29: North of Scotland Water Authority – revised funding allocation – average bills

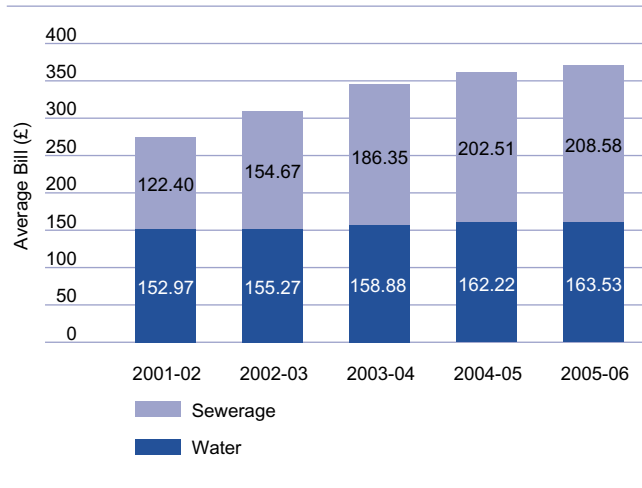
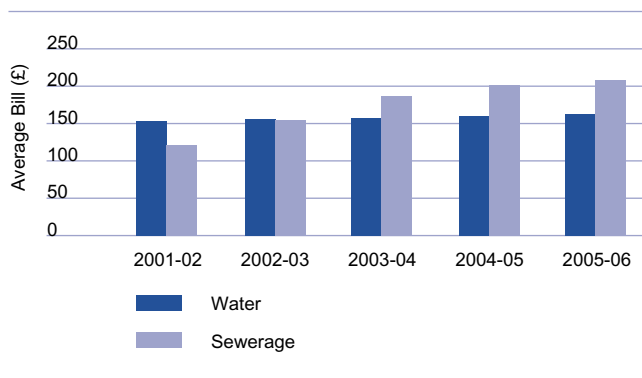


Table 38.16: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	1%	2%	2%	1%	7%
% Increase in average sewerage bill	26%	20%	9%	3%	70%
Total % increase in average bill	13%	11%	6%	2%	35%

Figure 38.30: North of Scotland Water Authority – revised funding allocation – average bills, water and sewerage split



k) West of Scotland Water Authority (allocation of public expenditure in line with commissioning letter)

i) Band D bills

Figure 38.31: West of Scotland Water Authority – original funding allocation – band D bills

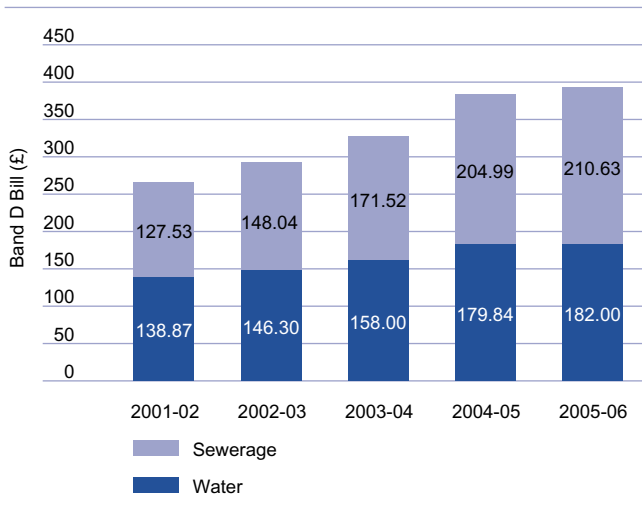
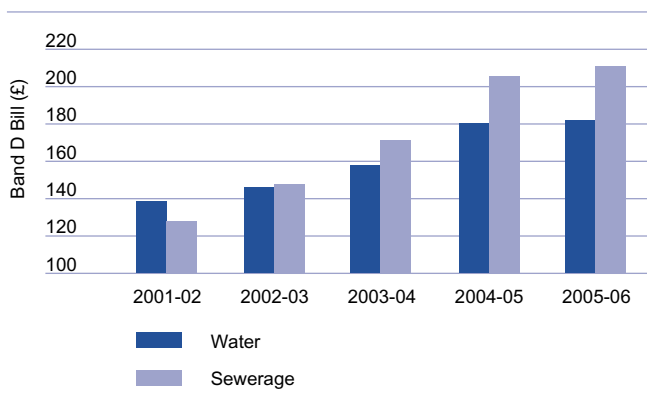


Table 38.17: Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	5%	8%	14%	1%	31%
% Increase in Band D sewerage bill	16%	16%	20%	3%	65%
Total % increase in Band D bill	10%	12%	17%	2%	47%

Figure 38.32: West of Scotland Water Authority – original funding allocation – band D bills, water and sewerage split



ii) Average bills

Figure 38.33: West of Scotland Water Authority – original funding allocation – average bills

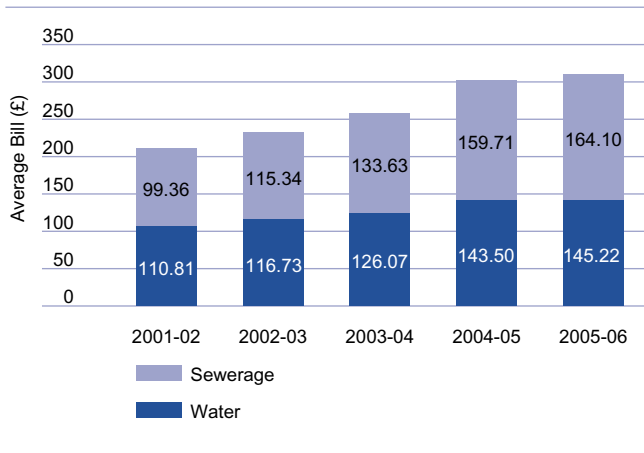
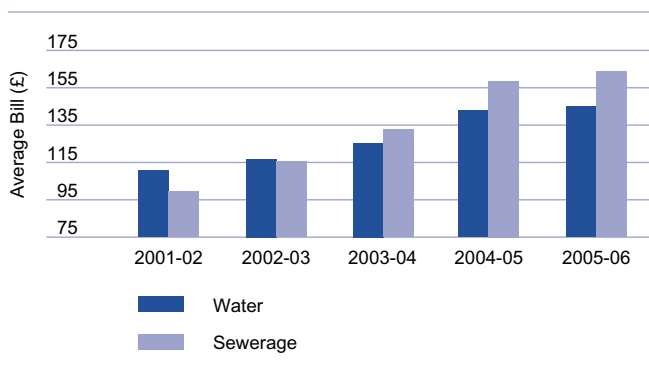


Table 38.18: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average water bill	5%	8%	14%	1%	31%
% Increase in average sewerage bill	16%	16%	20%	3%	65%
Total % increase in average bill	10%	12%	17%	2%	47%

Figure 38.34: West of Scotland Water Authority- original funding allocation – average bills, water and sewerage split



l) West of Scotland Water Authority (revised public expenditure allocation)

i) Band D Bills

Figure 38.35: West of Scotland Water Authority — revised funding allocation — band D bills

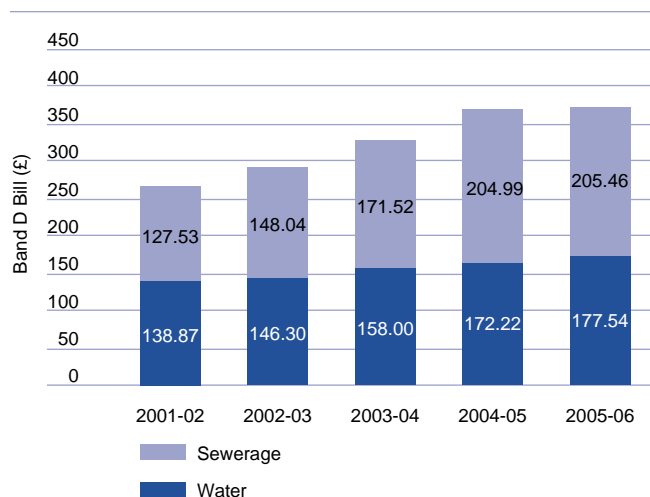
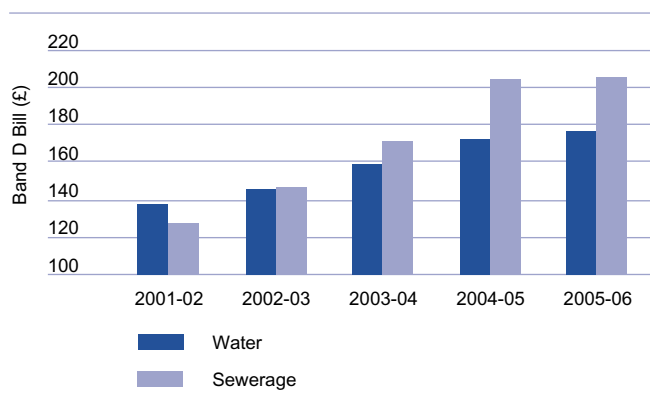


Table 38.19: Percentage increases in band D bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in Band D water bill	5%	8%	9%	3%	28%
% Increase in Band D sewerage bill	16%	16%	20%	0%	61%
Total % increase in Band D bill	10%	12%	14%	2%	44%

Figure 38.36: West of Scotland Water Authority – revised funding allocation – band D bills, water and sewerage



ii) Average bills

Figure 38.37: West of Scotland Water Authority – revised funding allocation – average bills

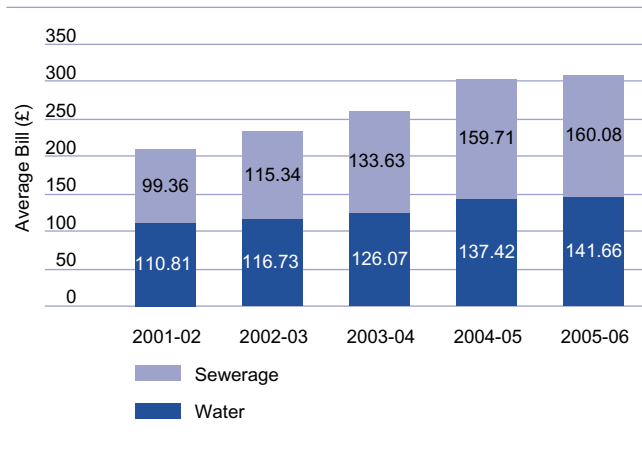
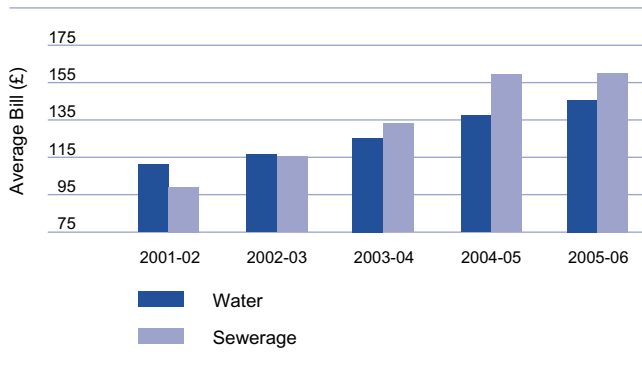


Table 38.20: Percentage increases in average bills

	2002-03	2003-04	2004-05	2005-06	2001-02 to 2005-06
% Increase in average Water Bill	5%	8%	9%	3%	28%
% Increase in average Sewerage Bill	16%	16%	20%	0%	61%
Total % Increase in average Bill	10%	12%	14%	2%	44%

Figure 38.38: West of Scotland Water Authority – revised funding allocation – average bills, water and sewerage split



m) Comparisons with England and Wales

Figure 38.39: Average domestic water bills in 2005-06 versus England and Wales

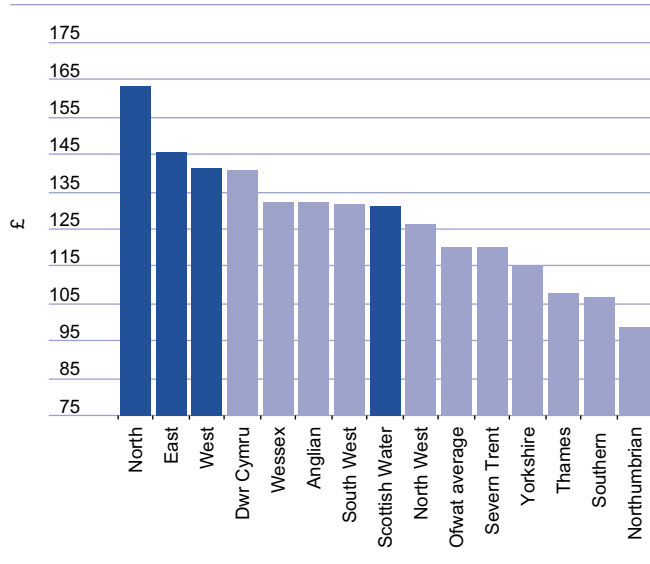


Figure 38.41: Average domestic water and sewerage bills in 2005-06 versus England and Wales

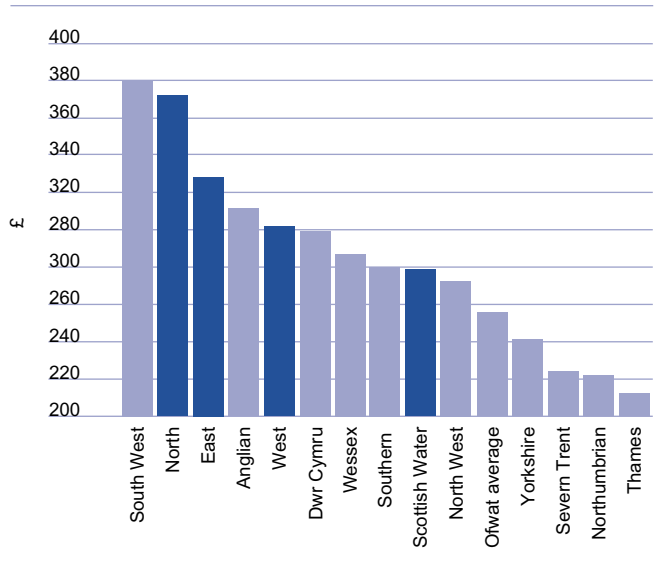


Figure 38.40: Average sewerage bills in 2005-06 versus England and Wales

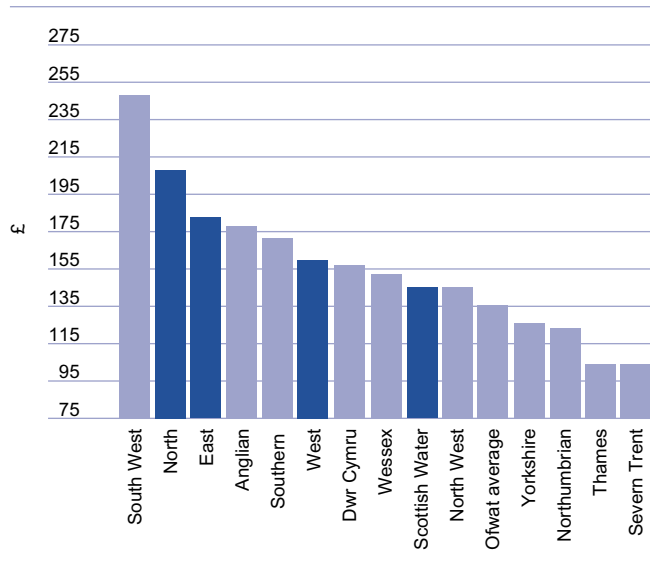


Figure 38.42: Comparison of average water bills with England and Wales

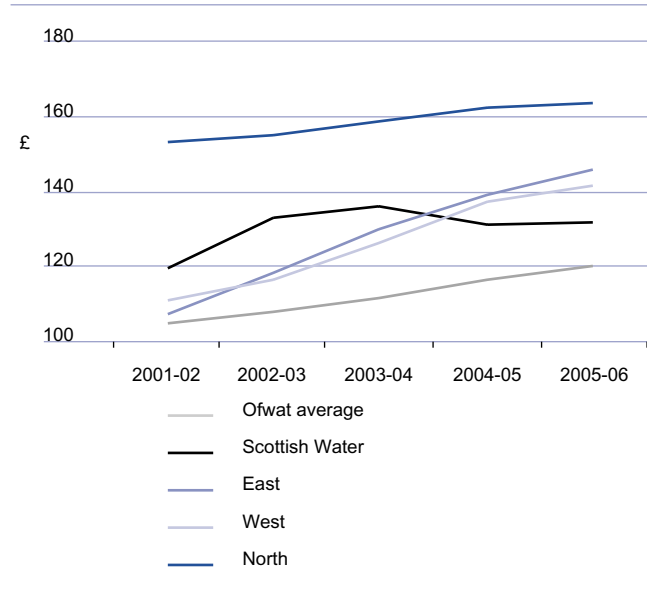


Figure 38.43: Comparison of average sewerage bills with England and Wales

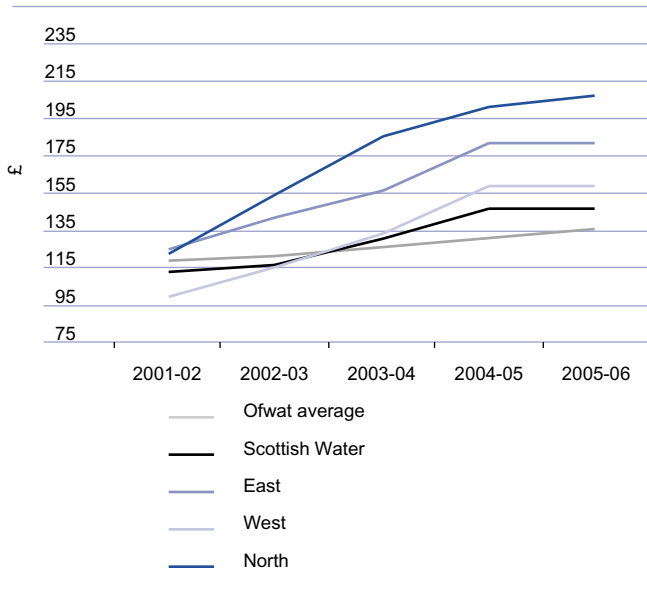
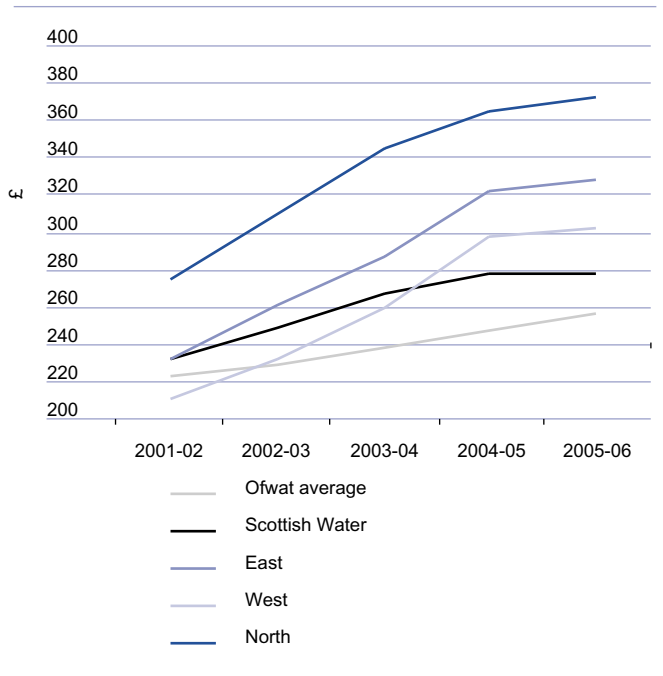


Figure 38.44: Comparison of average water and sewerage bills with England and Wales



n) Conclusions

The proposed merger will benefit all customers in Scotland, not just those currently served by the North of Scotland Water Authority. My analysis shows that bills in the North will be 2% lower in 2005-06 than they are in 2001-02. The price for sewerage will increase but this will be more than offset by a decrease in water charges.

Prices in the East and West will increase by 27% and 29% for the combined water and sewerage services. In both cases there will be an increase to both the water and sewerage charge (in the East 29% and 25% respectively, and in the West 15% and 43%). The increase in sewerage charges in the West will be most marked.

In the event that the Scottish Parliament does not approve the Scottish Water initiative, the implications for customers are serious. There will be further significant increases for customers of the North of Scotland Water Authority (7% and 70% for water and sewerage respectively) even if the Minister accepts my recommendation to reallocate public expenditure. There will also be larger increases in the East and the West. Under the three authority scenario the increase over the 2002-06 period would be 41% in the East versus the proposed 27% in the single authority scenario. Customers of the West of Scotland Water Authority would face a 44% increase rather than an increase of 29% in the single authority scenario.

Under the single authority scenario, average bills in Scotland will be right in the middle of the ten water and sewerage companies in England and Wales. Several regions (e.g. Anglian, Wales), with not dissimilar challenges, will pay more.

Under the three authority option, bills are likely only to be higher in Southwest England than in Scotland.

Section 7: Chapter 39

Assessment of Revenue Cap: Outlook for 2006 to 2010

a) Introduction

The Scottish water industry is entering a critical time. In this chapter, I outline the prospects for customer charges at the next Strategic Review of Charges, which is likely to cover the years 2006-10.

Prices have increased dramatically in recent years. These increases would have been necessary even if the efficiency of the industry had been addressed much earlier, however, a proportion of the charges paid by customers has been consumed by inefficiency. This has resulted in there being less money available to improve the environment or to improve the quality of service provided to customers. This Review highlights a number of issues that need to be addressed urgently. If the industry addresses the gaps in its knowledge about costs, if it becomes efficient and if it sets tariffs that broadly reflect costs, the outlook for customers is bright. The price of failure will be, however, very considerable.

Decisions taken now will impact on customers throughout Scotland. If Scottish Water is not approved by Parliament, the consequences for charge payers in the North of Scotland Water Authority area are serious. There are likely to be significant issues of affordability. Customers in the East and West areas will also be adversely affected. Not only will the £40 million per year, which I have conservatively estimated as the potential efficiencies from the merger, be lost, but the likelihood of the three authorities achieving their efficiency targets will also be much reduced. In this Review, I have estimated that the total costs to customers of not approving Scottish Water are in excess of £400 million over the period 2002-05 or £170 million per year by 2005-06. To put it another way, the potential impact on customer charges would be £80 on an average domestic bill, by 2005-06.

This chapter will outline the prospects for the next Review period in both scenarios: that Scottish Water is created and that the existing three authorities continue to operate.

By 2006, I believe that Scottish Water could have significantly narrowed the gap in operating cost and capital efficiency between the Scottish industry and the industry in England and Wales. However, it appears likely that the industry south of the border will continue to improve, albeit at a slower rate than in the past ten years, and this is likely to mean that there will be significant further scope for efficiency in the next review period.

The level of prices required under the three authority model would become increasingly difficult to justify in the next regulatory period.

b) Prospects for prices

i) Scottish Water scenario

The prospects for prices in the period from 2006 to 2010 are quite bright. I believe that it could be possible to have revenue caps for Scottish Water at 1% below the annual rate of inflation. Revenue caps for each of the existing three authorities could also be below the rate of inflation. I would estimate that at least RPI-0.5% would be possible for East of Scotland Water Authority and West of Scotland Water Authority, but a further increase of around RPI+0.5% would be needed for North of Scotland Water Authority over the period.

These indicative revenue caps depend to a critical extent upon the progress of the industry in closing the efficiency gap that exists between the industries in Scotland and England. Obviously if there is more progress than I have assumed in my Review for the current period, then the outlook could be even better. My risk analysis described in Chapters 33 and 37 suggests that there is a fairly high probability that the targets could be beaten. However, if the industry does not take steps to become efficient, even the creation of the proposed Scottish Water will not help. There is a very material risk that prices would have to increase sharply and that even more public expenditure would have to be allocated to the industry.

The range in potential outcomes is from a possible decrease of 13% in prices if Scottish Water does better than my expectations, to an increase of some 22% in the event that the organisation fails to realise the potential for change. Figure 39.1 illustrates the potential revenue requirements. The resulting Band D household charge is shown in Figure 39.2.

ii) Three authorities scenario

The three authorities model will see prices increase to a higher level for all customers in Scotland. In order for there to be a reasonable degree of certainty that public expenditure constraints would not be breached in the next regulatory period, there may have to be an increase of 20%. Figure 39.3 shows the revenue requirements, assuming that the authorities close half the efficiency gap by 2005-06. The resulting Band D household charge is shown in Figure 39.4.

Revenue caps and the profile bills Scottish Water and the three authorities

Figure 39.1: Scottish Water revenue requirements

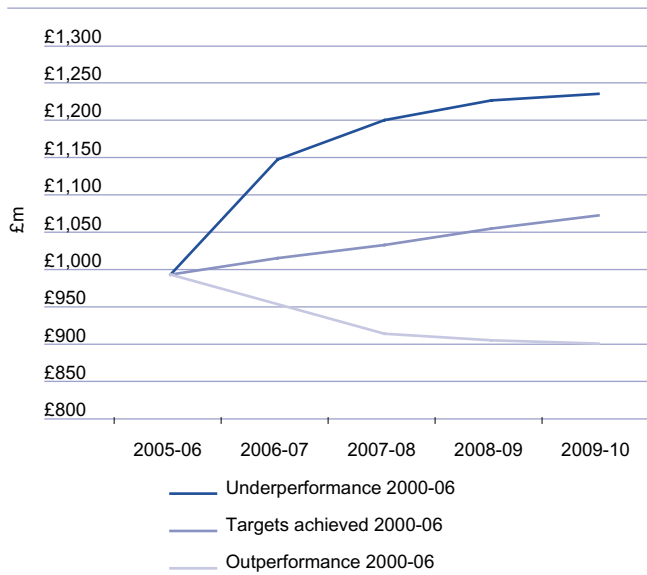


Figure 39.2: Scottish Water equivalent Band D charge

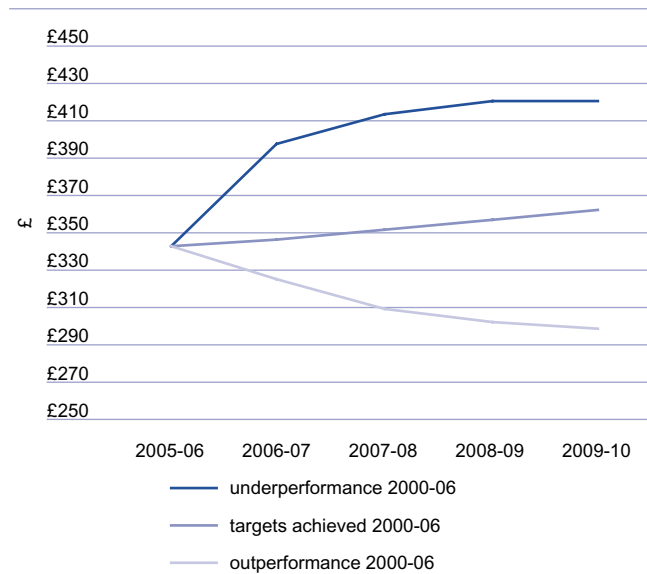


Figure 39.3: Projected water authority revenue requirements

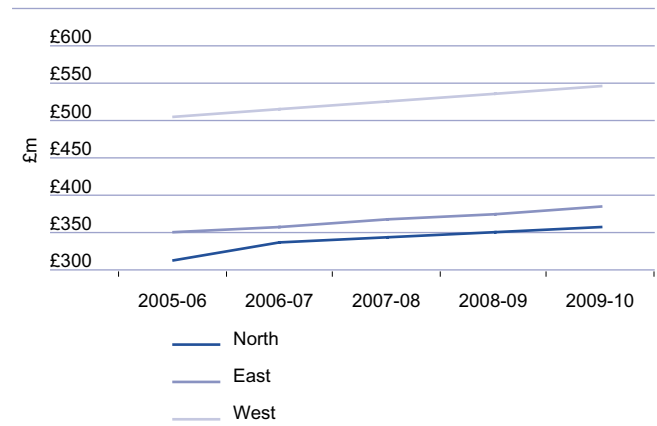
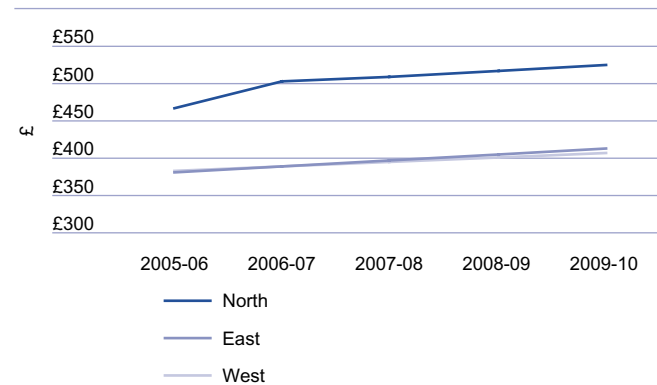


Figure 39.4: Water authority equivalent Band D charge



c) Prospects for investment

The Quality and Standards consultation document, issued by the Scottish Executive, highlighted the need for continuing investment in the water industry. The depreciation charge for the water industry will more closely reflect the expected life of assets, but it may still need to be increased. It is clear that the industry will need to spend at least the long run normative charge on the maintenance and refurbishment of the underground infrastructure. Table 39.1 outlines the minimum required investment for base maintenance.

In addition to this essential investment, a number of quality improvements are likely to be required. The main drivers of this investment are likely to be:

- the Water Framework Directive,

Table 39.1: Minimum required investment for base maintenance

	2002–06 average	2006–07	2007–08	2008–09	2009–10
Depreciation	£203.8m	£204.4m	£199.0m	£200.1m	£200.2m
Infrastructure renewals charge	£112.9m	£165.3m	£163.0m	£162.4 m	£162.1m
Total base investment	£316.7m	£369.7m	£362.0m	£362.5m	£362.3m

- lead standards,
- revisions to the Bathing Waters Directive,
- better management of drainage and sewerage systems.

It is unlikely that the level of investment in the next regulatory period will be less than in the current period and there is a chance that it could have to increase further. My estimates of revenue caps assume that there would be no need for an increase in spending.

d) Challenges ahead

There are considerable challenges during the current regulatory period. These include the delivery of much needed efficiency targets and an increased investment programme. Should Parliament approve Scottish Water, there will also be the challenge of merging the three authorities.

The challenges in the next review period (i.e. 2006-10) will be similar in some ways. There will be an on-going need for efficiency and the current large investment programme will continue. The focus of the investment programme will have changed slightly and there will be a greater need to understand the condition and performance of the underground infrastructure, which ensures 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 will take time to collect and interpret and it is

important that the management of the industry allocate sufficient resources to the collection of this information now. This will be a vital input to the Quality and Standards process for the next regulatory period.

There will also be some new challenges. The Scottish industry will have to learn to respond effectively in an environment where the customer has a choice of supplier. This will lead to new challenges in customer service. The network and treatment business within the authority will also have to learn to deal with a customer other than the retail arm of the authority. It will have to develop systems which ensure that it does not in any way favour its own retail arm. This may be at times a difficult challenge, but one that will have to be met.

e) More efficiency

My expectation is that the proposed Scottish Water will close 80% of the gap between its own performance and that of the comparator companies in England and Wales. It is reasonable, however, to expect that the comparator companies will beat the efficiency targets, set for them by Ofwat (indeed, it is intended that they are beaten). Table 39.2 illustrates the likely efficiency gap between Scottish Water and the comparator companies in 2006.

I would not expect the three authorities to do so well. My expectation is that they would succeed in closing only 50% of the gap between their current position and the comparator

Table 39.2: Analysis of remaining operating expenditure efficiency gap in 2005–06

Out performance of Ofwat target by plcs/Gap closure	% cost reduction needed to match comparator companies					
	60%	70%	80%	90%	100%	110%
0%	28%	23%	17%	9%	0%	(11)%
5%	33%	28%	21%	14%	5%	(5)%
10%	37%	32%	27%	20%	11%	0%
15%	42%	38%	32%	26%	18%	7%
20%	47%	43%	38%	33%	25%	15%

companies. The likely efficiency gap in 2006 would be as set out in Table 39.3

The largest single threat to the survival of the water industry in the public sector is its inefficiency. This will undermine customers' faith in the authority and could significantly worsen the competitive position of the industry. Closing this gap is therefore of the highest priority.

Table 39.3: Remaining operating expenditure efficiency gap in 2005–06, assuming 50% closure of gap

Outperformance of Ofwat target by plcs	% cost reduction needed to match comparator companies
0%	32%
5%	38%
10%	41%
15%	45%
20%	50%

f) Retail competition

Retail competition is likely to offer a choice to most customers in Scotland by the next regulatory period. 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 the proposed Scottish Water. If customer service is improved and if tariffs are made broadly cost reflective then the impact on the total revenues of Scottish Water will be minimal. The key success factor is reducing costs and moving the organisation significantly towards the efficiency frontier.

g) Corporate governance and incentives

The future operating environment for the Scottish water industry will be quite different. Competition will be a reality and there will be a clear need for management to push hard to deliver the savings that customers will require. This will be a real test for a publicly owned organisation. This will be the first time that a public sector organisation has had to learn to compete directly in a mass market. This differs even from the Post Office because the competitors are likely to be at least as well resourced and may actually be able to offer the customer more services.

There will be clear implications for the governance of this organisation. The best available management will have to be attracted and retained. This is likely to require flexibility in remuneration and incentives. It will also be vital however that these incentives are properly transparent and that the criteria of successful performance are clear to all. There are clear lessons from the public consultation in Wales on the incentives for directors of the Not For Profit Welsh Water (Glas Cymru). The incentives need to be clearly aligned with the interests of customers.

It will also be important to ensure that there continues to be a strong challenging board that will hold management to account directly.

h) Conclusion

I believe that the recommendations of the current Strategic Review of Charges will ensure that the outlook for customers improves significantly. It should be possible to meet customer expectations across a range of parameters.

If Parliament approves Scottish Water, it is likely that price increases should be kept below the rate of inflation in the period 2006-10. It is possible that price increases could similarly be kept below the rate of inflation for the three authorities, but from a much higher base, and there is a possibility that further increases could be required.

The current level of spending is unlikely to decrease and there is a possibility that a further increase may be required. This will deliver significant environmental and public health benefits to customers. An important example is the reduction in the amount of lead permitted in our water.

It is likely that there will be a real choice for most customers in Scotland during the next regulatory period.

I expect that the improvements in customer service, which have marked the period since 1996, will continue. The pressure of retail competition and the need to provide value for money to customers will ensure that customers will see real improvements.

Section 8

Conclusions, Advice and Recommendations

Section 8: Chapter 40

Conclusions, Advice and Recommendations

a) Conclusion

i) Introduction

This Strategic Review has been commissioned at a very opportune time. The proposed creation of Scottish Water will benefit customers throughout Scotland, particularly those who were previously served by the North of Scotland Water Authority. The efficiencies that have been identified during nearly two years of analysis by my office will ensure that customers in the East of Scotland Water Authority and West of Scotland Water Authority areas will also be beneficiaries of the move to a single authority. Customers in the East and West will get lower prices and better standards of service than would otherwise have been possible.

There are also clear benefits for customers that will result from the introduction of competition. This will fundamentally change the operating environment for water services providers. Competition will force costs down and will encourage improvements in the levels of service offered to customers. Service providers who consider competition as an opportunity are far more likely to benefit than those who try to resist. If the water industry in Scotland can approach the frontier of efficiency and offer customers tariffs that broadly reflect costs, then there need only be, at worst, a marginal impact on revenue. Customers will be the clear winners – they will benefit from better service and lower charges than would otherwise have been the case.

There will also be clear benefits to customers from the proposed investment programme, which was outlined in the Scottish Executive's Quality and Standards Paper. Not only will this investment improve further water quality and the environment, it will also ensure that assets are properly maintained and are replaced in a way that will minimise costs for customers. This is all in the interests of customers. It is vital, however, that customers can be confident that the environmental improvements, which are promised to result from the increased level of charges, are actually delivered. It is important, therefore, that the outputs of the proposed investment programme are rigorously monitored. I have already begun working with the Scottish Environment Protection Agency and the Water Quality Regulator to define how this monitoring can best be implemented. Coordination between all three regulatory functions will be essential.

ii) Value for money

In this period of rapid change, the interests of customers are best protected by a return to first principles. Ultimately, customers want a reliable service at an affordable price. This means that the primary duty of the regulator in promoting the interests of customers is to put pressure on the water industry to reduce its costs while at the same time delivering a better service to customers. This Review contains a number of important recommendations that will improve value for money to customers, both in the short term and in the future. My Review also suggests that a concerted effort should be made to address the problem of bad debt in Scotland. This is costing the average domestic customer in Scotland £12 per year. It is currently costing the average customer of the West of Scotland Water Authority £17 per year.

The interests of customers require that the water industry is financially sustainable over the long term. There is a clear consensus that the water industry in Scotland should remain in the public sector. The proposed move to Scottish Water will help to ensure that the public sector model is sustainable. My risk analysis demonstrates very clearly that the outlook for prices for all customers and for public expenditure is better if the merger takes place.

Scottish Water is not, however, a panacea. There are significant challenges that lie ahead. Customers must understand that current levels of investment in the water industry are not exceptional - there is a likelihood that investment will have to continue at current levels for the foreseeable future. Borrowing more to make ends meet now may seem, on the face of it, attractive, but it is an illusion. It will result only in much higher bills later and the cost in today's money for customers of the future would be higher.

iii) The efficiency challenge

Price increases for customers will be significant over the next four years. The central challenge for management is to deliver an efficient water industry in Scotland. The future of water services in the public sector in Scotland will fundamentally depend on management and workers bringing their organisation much closer to the efficiency frontier. Failure to deliver the efficiency targets would mean that even more significant increases would be required and that water charges in Scotland would be the highest in the UK by a considerable margin.

Success in delivering the efficiency targets will mean that the lower costs of capital in the public sector will offset the costs associated with serving a large rural population in Scotland. This will allow prices to be kept to around the UK average for all customers, from Stranraer to Stromness. Not only will charges for customers be unacceptably high if the efficiencies are not delivered but relatively high costs would also increase the chances of private companies being able to enter the Scottish water services market successfully.

Regulation has an important role to play in ensuring that the efficiencies are delivered. I intend to continue to regulate in a way that is robust, but fair. This is in the interests of customers.

There are some other significant challenges that need to be addressed head on. These include:

- the framework for competition,
- tools for success in the competitive market,
- governance issues,
- affordability,
- sustainability.

I will recap briefly on the challenges and opportunities presented by each of these issues below.

Framework for competition:

The proposed licensing framework will play an important role in facilitating fair competition. Customers will not benefit from 'cherry-picking'. It is vital to recognise that competition is already a reality and that the best defence for an incumbent is improving efficiency and levels of service. It is important and in the customer's interest that the opportunities and challenges that are presented by competition should be embraced. If the Scottish industry is perceived to offer value for money, then customers will choose to stay with the incumbent supplier.

There is only a very limited gross margin in the retail of water and sewerage services and there is not the opportunity for some of the large discounts, that have been offered in the electricity and gas sectors to tempt customers to switch supplier. Loss of customers is therefore more likely to result from failures in customer service. I am confident that the proposed Scottish Water can deliver value for money for

customers; the recent appointment of an experienced Chief Executive who has experience of improving the efficiency of a water business is to be welcomed. Delivery of value for money to customers will benefit not only the customer; it will also benefit the managers and employees of the industry.

Tools for success in the competitive market

Improving the level of service and increasing efficiency are key to success in any competitive market. The industry in Scotland will also need to develop tariffs that broadly reflect costs. This will require the authority to develop a detailed understanding of the costs of each element of service provision. Accounting separation of the discrete activities: networks and treatment, retail, and value added services, will help. It will be equally important, however, to understand the economics of supply. Costs do not depend materially on water consumption but rather on access to the water distribution and sewage collection infrastructures. This is likely to mean a rebalancing of tariffs away from volumetric charges towards higher fixed charges. This will result in fairer charges for all customers, as there will be a greater connection between the burden placed on the system by any customer and the charge that customer pays.

Governance issues

It is important that the public sector supplier is not at any disadvantage in its operations. This means that high quality management must be attracted to work for the authority and that they are properly and transparently incentivised in order to deliver the value for money that customers require. There will be a number of difficult decisions for managers as they attempt to deliver value to customers. It is, however, important that they are allowed the freedom to deliver the efficiency targets and improved levels of customer service in the most sustainable way, within the agreed revenue cap.

They will have to account to the board and ultimately to all of us, as customers, for their performance. Accountability for management decisions will be best achieved by the recruitment of a high-quality, commercially minded board. This board will then be able to check that management are on track to deliver the value for money required by customers. The Scottish Executive will need to use this board effectively and to ensure that the board is properly empowered to hold managers to

account. Local accountability is also important, but the strengthening of consultation by the authority and a greater role for the Consultative Committees of my office can effectively ensure that this interest is properly represented.

Affordability

Ultimately, the best way to make water bills as affordable as possible for customers in general is to increase the efficiency level of the industry and to deliver the service at the cheapest possible price. This, however, has to be consistent with the principles of financial and environmental sustainability, as only by doing so will there be certainty and stability for future charges.

The extent of non-payment of water bills by customers is significant and will need to be addressed if charges are to remain affordable. Customers who can, but choose not to pay, penalise the most vulnerable customers. It is they who can least afford the extra few pounds on their bill that results from non-payment.

There is, unfortunately, a relatively small number of customers who will find it genuinely difficult to pay their water bill. I recognise that many of these people are already provided with some help because of the progressive nature of the link between domestic bills and the Council Tax Bands and because of the Scottish Executive's initiative in introducing a transitional affordability scheme. There is, however, a strong case for further study of the issue of affordability.

Sustainability

It is important to recognise that action is required to put the Scottish water industry on a sustainable footing. This has nothing to do with competition and would be every bit as true if the vertically integrated monopoly was going to continue unchanged. As a society we have been under-investing in the water infrastructure for a significant number of years. If bills are to be kept at reasonable levels for customers today and in future it will be vital to begin to maintain the assets in a more cost-effective manner. This will require more pro-active management of operational risks in order to avoid storing up shocks for the future. Similarly, it is important that assets are depreciated over realistic lives and that we do not borrow funds that we will not be able repay. These three actions will ensure that charges are maintained at as low a level as is possible without running the

risk of a significant price hike being required to address problems that had been swept under the carpet.

This Review offers a realistic prospect that customers will face stable prices after 2005-06. Declining prices in real terms are a realistic possibility. Meeting the considerable investment needs of the water industry and raising the efficiency of operations and the quality of the customer service provided will be a vindication of the public sector model and something of which all of us can be justifiably proud.

b) Advice to Minister for Environment and Rural Development

I propose that the Minister adopts the following advice, which has been developed as a result of my Strategic Review of Charges:

i) Revenue cap for the three Scottish water authorities

The revenue cap profile for the three Scottish water authorities in the event that the Scottish Parliament does not approve Scottish Water is given in Table 40.1.

ii) Revenue cap for the proposed single authority, Scottish Water

The revenue cap profile for Scottish Water, in the event that the Scottish Parliament approves this initiative is given in Table 40.2.

iii) Harmonisation of charges

Charges should be harmonised across Scotland for both domestic and non-domestic customers, by no later than 2005-06.

iv) Cost reflective tariffs

Scottish Water should seek to develop tariffs that more broadly reflect the economics of the service provided. This will require that the fixed element of the charge faced by customers increases significantly from the current level."

c) Key recommendations

The Minister is invited to accept the following recommendations, which have been developed as a result of my Strategic Review of Charges:

- i) To endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and

Table 40.1: Revenue cap for the three Scottish water authorities

Water Authority	Projected revenue 2001–02	2002–03	2003–04	2004–05	2005–06	Total increase	
						Actual	Real
East	£249.3m	11.8%	10.3%	11.9%	2.7%	41.7%	28.4%
North	£232.0m	12.4%	11.4%	6.0%	2.5%	36.0%	23.2%
West	£352.2m	10.5%	11.9%	14.3%	2.3%	44.6%	31.0%

Table 40.2: Revenue cap for the proposed single authority, Scottish Water

Water Authority	Projected revenue 2001–02	2002–03	2003–04	2004–05	2005–06	Total increase	
						Actual	Real
Scottish Water	£825.9m ¹	7.5%	7.8%	4.6%	(1.3%)	19.6%	8.4%

the proposed Drinking Water Quality Regulator to ensure that consistent output measures and metrics are collected and monitored. This project will ensure that the environmental and public health benefits and the sustainable industry for which they are paying are actually delivered.

- ii) To instruct the water authorities or the proposed Scottish Water to adopt appropriate accounting separation. A similar accounting separation should also be required by the licence conditions of new entrants to the Scottish water industry.
- iii) To require the publication by my office of annual reports on the performance of the water industry in Scotland. These reports would cover operational costs, delivery of investment and the level of customer service.
- iv) To endorse further study into the affordability of water charges. To instruct water authority management to work with the local authorities and others to improve the support that is offered to vulnerable customers who find it difficult to pay their charges.
- v) To establish clear and public criteria for the payment of incentives to executive directors. These criteria should be based on overall achievement, within the proposed revenue cap, of the required environmental and public health compliance targets and customer service standards.

d) Notes to the advice and recommendations

The Minister is invited to note that:

- i) My advice on revenue caps for the proposed Scottish Water is fully consistent with the public expenditure limits outlined in the commissioning letter. The totals are as in Table 40.3.
- ii) My advice on revenue caps for the three existing authorities is based on the following public expenditure split:

Table 40.3: Revised public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06
East	£77.1m	£75.4m	£40.0m	£49.8m
North	£136.6m	£118.8m	£145.2m	£133.0m
West	£100.6m	£105.5m	£114.5m	£116.9m
Total	£314.3m	£299.7m	£299.7m	£299.7m

- iii) My estimate of the impact on domestic charges for the three existing authorities with this revised split of public expenditure is shown in Tables 40.4 and 40.5.

Domestic prices depend in large part upon the percentage of total revenue raised from the non-domestic sector. This percentage ought to reflect broadly the actual costs of supply to the non-domestic sector. At this time, however, there is insufficient cost information to justify any material change in the split of revenue between domestic and non-

¹ Projected 2001-02 revenue for the proposed Scottish Water differs from the sum of the projected revenues from the three existing authorities because of inter-authority trading

Table 40.4: Likely impact on domestic prices for the three authorities under revised public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06	Total increase	
					Actual	Real
East	12.0%	10.3%	12.0%	2.0%	41.1%	27.9%
North	12.0%	11.0%	5.5%	2.0%	33.8%	21.2%
West	10.5%	12.0%	14.5%	1.5%	43.8%	30.3%

Table 40.5: Resulting Band D charge

Water Authority	2001–02	2002–03	2003–04	2004–05	2005–06	Total increase
East	£270.00	c.£303	c.£333	c.£374	c.£381	c.£111
North	£350.18	c.£395	c.£440	c.£465	c.£474	c.£124
West	£266.40	c.£294	c.£330	c.£377	c.£383	c.£117

Table 40.6: Likely impact on domestic prices under the proposed Scottish Water

Water Authority	2002–03	2003–04	2004–05	2005–06	Total increase	
					Actual	Real
Scotland	7.2%	7.4%	4.1%	0.0%	19.9%	8.6%
East	9.9%	9.9%	5.2%	0.0%	27.1%	15.1%
North	0.0%	0.0%	(2.1%)	0.0%	(2.1%)	(11.3%)
West	9.9%	9.9%	6.6%	0.0%	28.8%	16.6%

Table 40.7: Resulting Band D charge²

Water Authority	2001–02	2002–03	2003–04	2004–05	2005–06	Total increase
East	£270.00	c.£296	c.£325	c.£343	c.£343	c.£73
North	£350.18	c.£350	c.£350	c.£343	c.£343	(c. £7)
West	£266.40	c.£293	c.£321	c.£343	c.£343	c.£77

Table 40.8: Revenue caps for the three water authorities in the event of the current public expenditure split

Water Authority	Revenue 2001–02	2002–03	2003–04	2004–05	2005–06	Total increase	
						Actual	Real
East	£249.3m	11.8%	8.3%	5.9%	3.2%	32.3%	19.9%
North	£232.0m	17.4%	5.5%	20.1%	0.5%	49.5%	35.4%
West	£352.2m	10.5%	11.9%	16.4%	2.7%	47.8%	33.9%

Table 40.9: Current public expenditure split

Water Authority	2002–03	2003–04	2004–05	2005–06
East	£87.1m	£83.1m	£83.1m	£83.1m
North	£116.6m	£111.1m	£111.1m	£111.1m
West	£110.6m	£105.5m	£105.5m	£105.5m
Total	£314.3m	£299.7m	£299.7m	£299.7m

domestic customers. It is possible that detailed cost information could suggest a lower contribution from large business and a slightly higher contribution from domestic customers and smaller businesses. If such information becomes available, the likely maximum impact on the projected domestic charges is likely to be between 5% and 10%. Any such increase should, of course, be phased to ensure that charges remain as affordable as possible.

- iv) My estimate of the impact on domestic charges in the event that Scottish Water is established is shown in Tables 40.6 and 40.7. See notes to d (iii) above.

² I have calculated the Band D charge separately for water and wastewater. In Table 40.7 I have presented the total estimated bill, assuming the customer is connected to both the water and wastewater service.

Table 40.10: Likely impact on domestic prices for the three authorities under current public expenditure split

Water Authority	2002-03	2003-04	2004-05	2005-06	Total increase	
					Actual	Real
East	12.0%	8.1%	5.5%	2.5%	30.9%	18.6%
North	17.0%	5.0%	19.8%	0.0%	47.2%	33.3%
West	10.5%	12.0%	16.8%	2.0%	47.4%	33.6%

Table 40.11: Resulting Band D charge

Water Authority	2001-02	2002-03	2003-04	2004-05	2005-06	Total increase
East	£270.00	c.£303	c.£327	c.£345	c.£354	c.£84
North	£350.18	c.£411	c.£433	c.£522	c.£522	c.£172
West	£266.40	c.£294	c.£330	c.£385	c.£393	c.£127

Table 40.12: Operating cost efficiency targets

Water Authority	2002-03	2003-04	2004-05	2005-06
Scotland (Total)	£63.0m	£96.9m	£115.9m	£135.8m
East	£13.1m	£20.2m	£24.2m	£28.3m
North	£14.9m	£22.9m	£27.4m	£32.1m
West	£35.0m	£53.9m	£64.4m	£75.4m

Table 40.13: Capital expenditure efficiency targets

Water Authority	2002-03	2003-04	2004-05	2005-06
Scotland (Total)	£70.8m	£102.1m	£169.1m	£207.0m
East	£0.0m	£8.7m	£18.8m	£29.3m
North	£34.8m	£40.6m	£66.0m	£73.2m
West	£36.1m	£52.8m	£84.2m	£104.5m

- x) The dual homes discount cannot be justified by the economics of water supply and sewage collection. While it is true that less water may be used in a second household, this reduces costs of supply only very marginally. In essence this means that dual homeowners are in receipt of a subsidy from other households. Furthermore, in a competitive retail market it may not be possible to maintain this individual allowance and the link to property bands. Ministers may wish to consider whether this discount, as currently applied, cannot be better targeted at vulnerable customers.

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15 October 2001

- v) In the event that the current split of public expenditure between the three authorities is maintained, the revenue caps shown in Table 40.8 would be required.
- vi) This split of public expenditure would be as shown in Table 40.9.
- vii) My estimate of the impact on domestic charges would be as shown in Tables 40.10 and 40.11. See notes to d (iii) above.
- viii) The proposed revenue caps for the proposed Scottish Water and for the existing three authorities assume the operating cost efficiency targets, from a 2000-01 base, shown in Table 40.12.
- ix) These revenue caps also assume the capital expenditure efficiency targets, from a 2000-01 base, shown in Table 40.13.

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Section 9: Appendix A

Glossary of Terms and Definitions

Access agreement: In common carriage, the legal agreement entered into by the network owner and the party seeking access to the network. The access agreement binds the parties to adherence to the network access code.

Access charges: The charges payable by parties seeking access to the network, as set out in the access code and detailed in specific network access agreements.

Access code: The detailed terms and conditions agreed between the water authority and the new entrant covering technical, legal, scientific, financial and commercial issues relevant to a proposal.

Annual return: The water authorities are required by the Commissioner to prepare an annual return each June to cover their activities in the previous year, and update forecasts. This return provides a framework for the authorities to submit the majority of the information required by the Commissioner to carry out his regulatory duties. This return was developed and brought into a Scottish context from Ofwat's June Return.

Asset lifecycle: The period from when an asset is purchased to when it is decommissioned.

Asset management efficiencies: Efficiencies achieved through improving value for money in the asset management process.

Asset management plan (AMP): Long-term projection of work required to be undertaken to maintain and upgrade the infrastructure assets. The English and Welsh equivalent of the Quality and Standards process.

Barriers to entry: Obstacles that prevent competitors entering the market. They include economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels and government policy.

Backlog expenditure: Expenditure required to renew assets to bring performance up to defined standards of service or to improve condition to an agreed investment profile.

Benchmarking comparison: A method of comparing the performance of different companies. The best performers in a

given area are used as a standard or benchmark for the others.

BOD: Biological oxygen demand – a measure of the pollution potential of raw sewage and treated sewage effluent.

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

Bulk supplies: Supplies of treated or untreated water traded between water authorities. These supplies are often traded under long-term contracts and on non-standard terms.

Capex: Capital expenditure.

Capital efficiency: Achieving the same or better outputs for less capital expenditure.

Capital maintenance: Planned work carried out by the authorities to replace and repair water and sewerage assets to provide continuing services to customers.

Capital programmes: Planned construction work being carried out by the authorities to build new assets such as sewage treatment works and water mains.

Central option: One of three options for future investment levels proposed by the Scottish Executive as part of the 2002-06 Quality and Standards consultation. The central option 'meets the legal standards and makes some improvements to the assets, through only investing enough in the underground infrastructure to prevent further deterioration'¹.

Charges scheme: Charges schemes set out the Scottish water authorities' charging policy and charge levels for each financial year. They are subject to approval by the Commissioner.

Charging year: The year commencing on 1 April.

Codes of Practice: Each water authority is required by the Local Government etc. (Scotland) Act 1994 to produce a Code of Practice detailing the services they offer. The Code includes the authorities' service aims, their Guaranteed Minimum Standard of service, their procedures for handling complaints and when compensation is payable to customers.

¹ Water Quality and Standards, Investment Priorities for Scotland's Water Authorities 2002-2006. Scottish Executive, August 2001

Cost base: A set of standard capital unit costs, designed to reflect the actual work to be carried out by the authorities. 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 an authority's performance is assessed.

Comparative efficiency studies: Comparisons of organisations' operating costs, taking into account factors outside management control which influence costs. Such factors include economies of scale, population density and the nature of the terrain. From these comparisons it is possible to rank or band companies by relative efficiency and to assess relative scope for reducing costs.

Construction operators' price index (COPI): The rate of inflation applying to the construction industry.

Consultative Committee: The 1999 Water Industry Act established three Committees to advise the Commissioner on the promotion of the interests of customers of the three Scottish water authorities. Each Committee is chaired by the Commissioner and consists of between six and nine members. The appointment of members followed the guidance issued by the Commissioner for Public Appointments. Members are unpaid.

Core business: The supply of water through pipes including discharge of waste water. It is the only aspect of the business that is regulated in England and Wales. In Scotland, economic regulation applies to all activities, whether core business or not.

Cost-reflective pricing: Charges are based on the cost to the service provider of actually providing that service to a customer.

Council Tax bands: The use of the value of a domestic property to set the level of Council Tax and water charges paid by domestic customers.

Cross-subsidy: The subsidy 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.

Cryptosporidium: A waterborne parasitic micro-organism, believed to originate from livestock. Cryptosporidia have been identified as being responsible for a small number of acute diarrhoea cases (cryptosporidiosis).

Cubic metres: 1,000 litres.

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 (i.e. their original purchase price), less depreciation where appropriate, the assets are shown at their current cost (replacement cost) at the time of producing the accounts. This method of accounting is used in tandem with historic cost accounting (HCA) in the water industry because of the importance of capital assets and the fact that historic costs do not reflect the asset's true worth.

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 economic life.

DEFRA: Department for Environment, Food and Rural Affairs.

Discharge consent: Permission granted by the Scottish Environment Protection Agency to an organisation discharging sewage or trade effluent to controlled waters. The permission sets out the conditions under which the organisation may make the discharge.

Domestic properties: Properties used as single domestic dwellings (normally occupied), receiving water and/or sewerage services for domestic purposes only.

Econometric modelling: The use of regression and other statistical techniques to model the relationships that underlie economic and financial results.

Economic leakage level: The point at which further leakage control activity would cost more than alternative means to bridge the gap between supply and demand.

Economic life: The economic life of an asset is the period for which an asset remains useful.

Economies of scale: Economies or savings resulting from the use, management or production of goods in large quantities. A lower cost per unit of output is achieved than would have been the case if smaller quantities were produced.

Efficiency gap: The difference between the current level of efficiency of a water authority and the assessed level of efficiency of the benchmark comparator.

Enhanced option: One of three options for future investment levels proposed by the Scottish Executive as part of the 2002-06 Quality and Standards consultation. The enhanced option 'allows substantial progress towards modernising all assets. It is also the only option that includes significant resources for removing development constraints and first time connections'².

External Financing Limit (EFL): A limit placed on the authority's new debt borrowings by Scottish Ministers.

Financial indicators: Certain financial ratios specified in appointed business licences of English and Welsh companies, such as gearing, interest cover and dividend cover. These are used to measure financial performance.

Financial model: A computer model, which uses historical financial data together with a series of assumptions and scenarios to predict the future incomes and expenditures (and, hence, the revenue caps) of the water authorities.

Financial Reporting Standards (FRSs): Statements of accounting standards as issued by the Accounting Standards Board.

Gaming: Strategic behaviour by companies, aimed at benefiting shareholders by influencing regulation; in particular, the submission of costs for inclusion in the regulatory asset value which are relatively higher than those put into the profit and loss account, thus artificially raising regulatory asset value and earning a higher return.

Gearing: A company's net debt expressed as a percentage of its total capital (i.e. the ratio of net debt to net debt plus equity expressed as a percentage).

Guaranteed Minimum Standards: The minimum level of customer service customers should expect of West, East and North of Scotland Water Authorities set by the Commissioner. If the authorities fail to meet these standards a compensation payment is made.

Highway drainage charge: The part of the surface water drainage charge that covers the drainage of roads.

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.

Incumbent: The water undertaker required to provide statutory water services within a geographically defined area. In Scotland these are the three Scottish water authorities.

Indexation: The policy of connecting prices, costs, wages, taxes etc to rises in the general price level, retail prices or other measures of inflation.

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.

Input regulation: Monitoring of the method of delivering required outputs, for example monitoring the number of kilometres of water mains renewed for a given expenditure (see Output regulation).

² Water Quality and Standards, Investment Priorities for Scotland's Water Authorities 2002-2006. Scottish Executive, August 2001.

Interest cover: The number of times a company's profits, before interest and tax, cover interest due on all its borrowings.

June Return: The framework used by Ofwat for the submission of regulatory information by the English and Welsh water and sewerage companies.

Large users: Industrial and commercial customers using significant annual amounts of water, usually more than 100 million litres per year, or the equivalent in sewerage services or trade effluent disposal.

Licence: The water (and sewerage) companies in England and Wales operate under licences granted by the Secretaries of State for the Environment and for Wales, or by the Director of Ofwat, to provide water and sewerage services. The licences impose conditions on the companies, which the Director is required to enforce.

Load: A measure of strength and quantity of waste water, usually expressed in Kg BOD per day.

Megalitre: one million litres, or 1,000 cubic metres.

MI/day: one megalitre per day.

Minimum option: One of three options for future investment levels proposed by the Scottish Executive as part of the 2002-06 Quality and Standards consultation. The minimum option 'meets the standards set by regulations on water and sewage treatment. This option has low-cost solutions and does not tackle the state of fast deteriorating existing assets, such as treatment plants, water mains, sewers and so on³.

Modified historic cost: A basis for valuing assets by increasing the asset cost by inflation each year to represent a more realistic cost level.

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 charge: The fixed charge assigned to cover the cost associated with supplying water through the network. This charge is linked to meter size.

Network: The physical assets downstream of production and bulk storage facilities owned by the Scottish water authorities which are essential for the supply of water to customers up to the boundary stopcock of customer premises.

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 which are used exclusively for public, business, trade or manufacturing purposes, or domestic dwellings also 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.

Off-network: A privately owned water supply or waste water treatment and disposal system.

Ofgem: Office of Gas and Electricity Markets, regulator of the electricity and gas industries in Great Britain.

Ofwat: Office of Water Services, regulator of the water and sewerage companies in England and Wales.

One-off costs: Costs appearing in the accounts that are not regular occurrences. Examples include redundancy payments, drought costs and unusual legal fees.

Operating costs: Operating expenditure plus capitalised maintenance of assets.

Operating expenditure: The day-to-day cost of running the water and sewerage service, excluding capitalised maintenance of assets.

Opex: Operational expenditure.

Output regulation: Monitoring the results of the method of capital investment, for example the improvements in the drinking water quality index resulting from new water mains being laid (see Input regulation).

³ Water Quality and Standards, Investment Priorities for Scotland's Water Authorities 2002-2006. Scottish Executive, August 2001

Per capita consumption: The estimated amount of water used by each individual and any internal plumbing losses.

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 load of 60g of biological oxygen demand (BOD). This measure includes industrial waste water treated at works. Hence, the capacity of a works can greatly exceed the population served in the catchment, especially if a large volume of industrial effluent is also treated by the works.

PPP: Public Private Partnership: An agreement between an authority and a private contractor for the building and operation of a waste water treatment works. The assets are owned and run by the contractor, but the land they are built on is usually leased from the water authority. The water authorities pay the contractor a set tariff per cubic meter of treated sewage and sludge. The contractor bears all the construction, maintenance, operating and financial risks associated with the project.

Priority register: An initiative intended to address the needs of customers who may have particular difficulties in the event of an interruption to supply, or who have special needs in terms of information provision. The concept is to create a register, possibly in conjunction with other utilities, of these customers and their needs, so that they receive the service they require.

Privatisation: To transfer the production of goods or services from the public sector of an economy into private ownership and operation.

Procurement efficiencies: Increased value for money achieved through minimisation of the whole life costs of new assets.

Quality and Standards: The standards set by the Scottish Executive and the Scottish Environment Protection Agency to ensure Scotland receives safer drinking water and a cleaner

environment. The standards are determined largely by the policies of Scottish Ministers, which are underpinned by standards agreed within the European Union. The Quality and Standards Process sets out the environmental and drinking water standards that the Scottish water authorities must meet and estimates the investment that is required to meet them. The Quality and Standards programme for 2002-06 was announced by the Minister for the Environment and Rural Development on 29 August 2001.

Quality performance audits: A system of monitoring the performance of the water authorities in handling contacts from customers in terms of compliance with standards and codes, and particularly quality.

Rate of return: The annual income and capital growth from an investment, expressed as a percentage of the original investment.

Rateable value: Commercial property valuation as defined in Section 74 of the Local Government Finance Act 1992.

Regulatory Information: Financial, customer and engineering data collected by the regulator for monitoring, benchmarking and financial analysis.

Regulatory letters: Letters requesting regulatory information from the water authorities by the Commissioner.

Reporters: Independent engineering consultants who are under a duty to report to Ofwat on the accuracy of the English and Welsh companies' annual returns and their delivery of outputs.

Resource accounting and budgeting (RAB): An accounting basis which assists the planning, controlling and reporting on public expenditure. The main changes to accounting practice on a RAB basis is the revaluation of fixed assets to a more realistic cost basis. It is on this cost basis that depreciation is charged. This is known as revaluing assets on a modified historic cost basis. It involves increasing asset cost by inflation each year to represent a more realistic cost level.

Retail price index: The rate of inflation applying to a basket of retail prices over a period of time.

Revenue cap: The revenue cap is the maximum increase in revenue that a water authority can receive through customer charges in any one year.

Scottish Executive: The devolved government in Scotland and their civil service support.

Secondary water and sewerage charges: Charges for any service provided by the water authority, other than for the supply of water and the removal of waste water. For example secondary charges include the charge for connecting to mains water and sewerage, building water supply, field troughs and desludging septic tanks.

SEPA: Scottish Environment Protection Agency. Established in 1996 as the national public body responsible for environmental protection and improvement in Scotland. SEPA regulates potential pollution to land, air and water, the storage, transport and disposal of controlled waste and the keeping and disposal of radioactive materials.

Special factors: Factors taken into account when setting the authorities' operating expenditure targets. An example would be the remoteness of many customers in the North of Scotland.

Specialised quality performance assessments: Water Industry Commissioner for Scotland audit of the performance of a water authority in handling contacts from customers on a particular subject.

Spend to Save: Spend to Save expenditure is spending now to save money later, for example redundancy payments now reduce wage bills in the future.

Supplier of last resort: This supplier has to ensure that basic water and sewerage services are available in the event of a new entrant failing to meet its obligations.

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 (e.g. 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.

Trade effluent: Industrial waste water other than that produced through normal domestic systems such as sinks and toilets.

WICS: Water Industry Commissioner for Scotland.

Section 9: Appendix B

Price review model: final validation report: September 2001 Report prepared by Scott Moncrieff

Introduction

This report has been prepared as the final stage of the validation of the Price Review Model used by the Water Industry Commissioner for Scotland to calculate his recommendations on revenue caps.

The work has been carried out by the Business Technology Group of Scott-Moncrieff, in order to provide both financial and software design expertise in the consideration of the model.

This report sets out the project approach, how we assessed the areas of risk identified during our initial review and our approach to substantive testing, carried out to support our analysis and conclusion as to the reliability and integrity of the Price Review Model.

This report is being issued at the completion of the review, to the Water Industry Commissioner for Scotland.

Study objectives

The primary purpose of this audit was to provide the Water Industry Commissioner for Scotland and the Scottish Executive with assurance as to the reliability and integrity of the information generated by the pricing model.

In particular the audit work sought to ensure that there was no opportunity for material errors in the recommendations made by the Water Commissioner as a result of errors in the model.

This report summarises the work carried out, the primary risks identified and our opinion on the reliability and integrity of the pricing model.

Project assumptions

No consideration or challenging of the accounting principles within the model, or their application, was undertaken as part of this project.

Our review of the various assumptions entered into the model is restricted to confirming that they were supported by verifiable evidence approved by the Commissioner's professional staff.

Other methodologies and formulae developed and used to calculate or justify those assumptions have also been accepted as read.

Project approach

In order to allow us to commence our review of the Price Review Model, a series of meetings were undertaken with staff at the Water Industry Commissioner for Scotland's office in Stirling. The aim of these meetings was to obtain a degree of background knowledge both of the model itself and the importance and significance of the system to the Water Industry Commissioner for Scotland.

The meetings also provided background to the development of the model and the compilation and uploading of data into the model.

During this initial phase of the project we obtained a thorough understanding of the model and the environment within which it is operating. Part of this initial appraisal was a high level risk analysis to ensure that the audit focused on those areas of greatest risk.

The risk analysis was broken down into four main elements:

- Identification of the assets employed (e.g. the pricing information, the model itself);
- Evaluation of the impact of an adverse event on those assets;
- An assessment of the likelihood of the adverse event occurring;
- The identification of appropriate countermeasures to protect the assets or limit the damage caused by an event.

The areas we evaluated were those which we expected to present the highest risks, and included:

- Management
- Security
- Data quality
- Design quality
- Sensitivity analysis

The outcome of this phase identified the key risks and allowed us to finalise our approach to the review and testing of the model reflecting these risks.

Based on the outcome of the above we carried out a detailed review of the pricing model and supporting systems.

Risks were assessed on an ongoing basis throughout the project, with the programme of work adjusted accordingly.

In addition to reviewing the design parameters we undertook a range of detailed systems tests using a variety of Computer Assisted Audit Techniques. These were designed to test for system failures such as the incorrect processing of data, acceptance of invalid data, corruption of data or the generation of invalid data in reports.

Conclusion

Based on our understanding of the Commissioner's approach and our analysis of the pricing model, we are satisfied that it incorporates all of the principles set out in his approach to calculating his recommendations on revenue caps.

Our scrutiny of the Commissioner's audit trail for the data used in the model, supplemented by intensive deconstruction, analysis and substantive testing of the actual model, allows us to conclude that:

The model is accurate in all material respects and represents fairly the challenges faced by the water authorities.

Although we are satisfied that:

- the modelling approach adopted; and
- the data processing and manipulation procedures used to both populate the model and subsequently calculate summary reports and graphs;

is unlikely to result in material errors in the price review process; we did have concerns over the robustness, operational flexibility and ultimately data integrity of the price model, outwith a supported and managed environment.

We were able to satisfy ourselves that in its current operating

environment within the Commissioner's office, there is a level of support and development knowledge of the system that enables the key operators to monitor the model's performance and ensure it continues to reflect the Commissioner's desired approach and generates valid results.

We have supplied the Commissioner with a separate report detailing a range of system development, management and monitoring procedures which would enhance the reliability and integrity of future price review models.

We have also confirmed that appropriate arrangements are in place to secure the final version of the pricing model, used to generate the figures that are presented in the Commissioner's published Review.

The Water Industry Commissioner for Scotland is asked to consider the contents of this report and accept the conclusions drawn as a result of the work carried out.

We would like to thank all members of the Water Industry Commissioner for Scotland's staff we dealt with, for their co-operation and assistance during the course of this review.

Scott-Moncrieff
Chartered Accountants
September 2001

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Water Industry Commissioner For Scotland Income and Expenditure Statement

	Audited Actuals 8899	Audited Actuals 8900	Audited Actuals 0001	WA Budget 0102	0203	0304	0405	0506	0607	0708	0809	0910	1011	1112	1213	1314	1415	1516	1617
Customer Revenue	597.4	640.3	753.7	832.4	885.4	964.1	1,007.5	984.3	1,074.2	1,033.8	1,053.8	1,074.3	1,085.1	1,118.4	1,138.1	1,160.2	1,182.8	1,205.4	1,229.3
Revenue Grants	-	-	-	7.4	7.4	-	8.1	8.4	8.4	-	8.8	9.2	9.5	9.7	10.0	10.2	10.5	10.7	11.0
Asset Depreciation	63.14	71.84	79.3	110.7	133.5	161.7	173.3	173.8	181.1	155.8	156.9	157.0	157.7	158.9	160.5	162.2	163.7	165.5	168.0
Infrastructure Depreciation	59.7	61.3	61.8	149.7	127.0	123.3	183.5	190.9	206.8	205.2	205.6	205.3	204.2	199.6	198.1	194.4	191.5	191.8	189.1
Total Depreciation	122.84	133.14	149.07	260.39	260.49	246.96	356.78	364.66	389.70	361.67	362.51	362.31	351.88	318.68	318.62	318.48	317.80	317.34	317.09
Manpower Costs (less capitalisation)	131.00	140.58	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81	147.81
Materials and Consumables	42.92	36.90	49.78	57.78	63.98	70.78	78.78	87.78	97.78	107.78	117.78	127.78	137.78	147.78	157.78	167.78	177.78	187.78	197.78
Operational Costs	41.85	34.93	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96	41.96
Base Date pre 1996	-	0.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Grant pre 1996	-	0.66	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortisation of Grants and Contributions	-	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Direct Opex	348.44	369.03	386.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31
Inflation Increment to Base Direct Opex	-	-	9.16	18.54	18.54	28.17	36.03	48.14	56.50	69.12	80.00	91.16	102.60	114.32	126.33	138.65	151.27	164.21	177.48
Additional Level of service costs	-	2.35	0.42	0.42	0.12	0.33	0.64	1.05	2.40	4.80	6.12	7.87	10.00	12.00	14.00	16.00	18.00	20.00	22.00
Inflation increment to level of service addition	-	0.01	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controllable Opex (inc. Inflation) - memo line	-	-	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15
Controllable Opex (inc. Inflation) - memo line	-	-	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58	15.58
Direct operating sub-totals	348.44	369.03	386.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31	366.31
PFI Charge	2.00	13.20	22.09	35.61	106.18	106.18	107.61	108.48	108.48	108.48	108.48	108.48	108.48	108.48	108.48	108.48	108.48	108.48	108.48
Inflation Increment to PFI Charge	-	-	1.39	1.39	5.38	8.33	11.17	14.26	17.32	20.47	23.69	27.00	30.38	33.86	37.41	41.06	44.80	48.63	52.56
less inter-authority costs	-	-	-	5.17	5.30	5.43	5.56	5.70	5.84	5.99	6.14	6.29	6.45	6.61	6.78	6.95	7.12	7.30	7.48
Collaboration efficiency	-	-	-	21.00	25.00	25.00	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30	25.30
Operating Costs	472.98	514.71	549.93	572.74	671.63	673.31	739.83	740.97	748.92	752.49	756.71	764.97	773.88	783.40	793.56	804.32	815.72	827.76	840.40
Net Profit from non-core business activities	124.42	125.80	204.97	192.41	212.17	233.39	263.60	248.23	252.94	274.92	288.36	302.80	318.27	334.79	352.41	371.16	391.10	412.35	435.00
Interest Charges	-	-	-	-	-	153.84	154.94	152.83	147.46	140.44	131.39	121.46	110.24	97.83	84.18	69.16	52.68	34.67	14.99
Exceptional Items/One-off costs	-	-	-	-	-	85.00	26.00	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Opex	-	-	-	-	-	8.00	9.24	9.70	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	-	2.33	2.39	-	6.38	8.80	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	14.99	9.66	34.56	10.54	34.98	53.85	94.30	104.97	105.97	134.20	156.90	181.31	201.82	218.46	239.01	264.45	293.41	327.00	366.11
Taxation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	14.99	9.66	34.56	10.54	34.98	53.85	94.30	104.97	105.97	134.20	156.90	181.31	201.82	218.46	239.01	264.45	293.41	327.00	366.11

Water Industry Commissioner For Scotland Balance Sheet

Date: 11-10-2001 10:40

Scenario flag: EPSBASUCPS

Model name: Year 4 Cut v3

User: RK

Authority: Total Scotland

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Fixed Assets:																			
Tangible Assets	1,554	1,816	2,077	2,473	2,700	2,900	3,085	3,228	3,312	3,394	3,473	3,521	3,567	3,655	3,741	3,825	3,905	3,982	4,055
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	1,554	1,816	2,077	2,473	2,700	2,900	3,085	3,228	3,312	3,394	3,473	3,521	3,567	3,655	3,741	3,825	3,905	3,982	4,055
Current Assets:																			
Stocks	4.53	4.62	4.86	8.06	8.06	8.68	9.07	8.95	9.13	9.30	9.48	9.67	9.86	10.05	10.24	10.44	10.64	10.85	11.06
Debtors	149.99	158.43	165.95	158.35	170.13	183.18	191.44	189.03	192.69	196.42	200.23	204.11	208.07	212.11	216.23	220.44	224.73	229.10	233.56
Cash	7.65	2.03	3.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	162.17	165.08	173.98	166.41	178.19	191.85	200.51	197.98	201.82	205.73	209.71	213.78	217.93	222.16	226.48	230.88	235.37	239.95	244.63
Creditors (falling due within one year)	167.06	206.04	223.85	208.36	223.86	241.02	251.90	248.72	253.54	258.45	263.46	268.57	273.78	279.10	284.52	290.05	295.69	301.45	307.32
Net Current Liabilities	4.89	40.96	49.87	41.95	45.67	49.17	51.39	50.74	51.72	52.72	53.75	54.79	55.85	56.94	58.04	59.17	60.32	61.50	62.69
Total Assets Less Current Liabilities	1,549.18	1,775.36	2,027.55	2,431.53	2,654.56	2,850.62	3,033.91	3,177.39	3,260.39	3,341.71	3,419.51	3,465.86	3,511.47	3,598.17	3,683.31	3,765.65	3,845.06	3,921.01	3,992.37
Creditors (amounts falling due after more than one year)	6.51	8.47	3.14	16.67	17.91	19.28	20.15	19.90	20.28	20.68	21.08	21.49	21.90	22.33	22.76	23.20	23.66	24.12	24.59
Provisions for liabilities and charges	28.64	28.81	50.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	1,514.03	1,738.07	1,974.38	2,414.86	2,636.65	2,831.34	3,013.76	3,157.49	3,240.11	3,321.03	3,398.43	3,444.37	3,489.57	3,575.84	3,660.55	3,742.45	3,821.40	3,896.90	3,967.78
Capital and Reserves																			
Government and Other Loans	1,479.53	1,692.21	1,904.11	2,142.49	2,292.74	2,395.17	2,441.54	2,435.81	2,366.67	2,265.15	2,135.60	1,948.85	1,739.51	1,505.97	1,246.38	958.56	640.39	290.03	95.12
Capital Reserve	94.99	94.99	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79
Revaluation Reserve	0.00	0.00	0.00	191.56	228.12	266.52	308.28	352.78	399.16	447.40	497.44	548.82	601.53	654.89	710.18	766.71	824.42	883.27	943.20
Income and Expenditure Account	60.51	49.14	14.52	3.98	31.00	84.85	179.15	284.12	389.50	523.70	680.60	861.92	1,063.74	1,330.19	1,619.19	1,932.39	2,271.80	2,638.80	3,034.91
TOTAL	1,514.01	1,738.06	1,974.38	2,414.86	2,636.65	2,831.34	3,013.76	3,157.49	3,240.11	3,321.03	3,398.43	3,444.37	3,489.57	3,575.84	3,660.55	3,742.45	3,821.40	3,896.90	3,967.78

**Water Industry Commissioner For Scotland
Cashflow Statement**

Date: 11-10-2001 10:40
Scenario flag: ERBIBJICP3
Model name: Year 4 Cut v3
User: RK
Authority: Total Scotland

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Operating Profit	204.67	153.21	217.17	283.89	265.00	248.20	252.84	274.64	288.30	302.80	312.07	364.28	373.18	382.36	392.10	401.68	411.10
Add Back Depreciation	79.27	110.71	133.47	161.66	173.29	173.75	161.12	155.75	156.89	157.01	157.71	158.92	160.52	162.24	163.73	165.55	167.97
Amortisation of grants and contributions	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	81.60	149.67	127.02	123.29	183.46	190.91	208.58	206.21	205.62	205.29	204.17	159.65	158.11	156.23	154.06	151.79	149.12
Change in Working Capital	24.80	44.42	4.96	4.87	3.09	0.90	1.37	1.39	1.42	1.45	1.48	1.51	1.54	1.57	1.60	1.63	1.67
Exceptional Items (Spend to Save OPEX)	44.83	-	40.00	65.00	25.00	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	345.28	369.17	442.62	488.72	599.85	611.96	623.90	638.01	652.23	666.56	675.43	694.35	693.34	702.39	711.50	720.65	729.86
Investment Sources and Uses of Funds																	
Infrastructure Renewal	81.60	106.44	83.79	80.06	140.23	147.67	165.35	162.98	162.39	162.06	160.94	159.65	158.11	156.22	154.06	151.79	149.12
Quality Related Investment	342.56	358.48	351.89	331.06	360.29	315.32	241.95	233.07	228.90	196.26	194.90	193.34	191.47	189.19	186.58	183.82	180.59
Other Investment (Spend to Save CAPEX)	-	-	15.00	35.00	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	4.68	-	8.38	8.80	9.24	9.70	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	419.48	464.91	442.29	437.32	491.28	453.29	407.30	396.05	391.29	358.32	355.84	352.98	349.58	345.41	340.64	335.62	329.72
Financing Sources and Uses of Funds																	
Interest Paid	127.67	142.67	150.57	153.84	154.94	152.93	147.46	140.44	131.39	121.49	110.24	97.83	84.18	69.16	52.69	34.67	14.99
Taxation Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued	10.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	65.53	20.58	49.65	49.65	60.52	62.65	62.66	62.66	48.46	57.61	57.61	57.61	57.61	57.61	57.61	57.61	57.61
New Debt Assumed	277.61	258.99	199.90	152.09	106.89	56.92	6.48	38.86	81.09	129.14	151.73	175.92	201.98	230.21	260.55	292.75	327.54

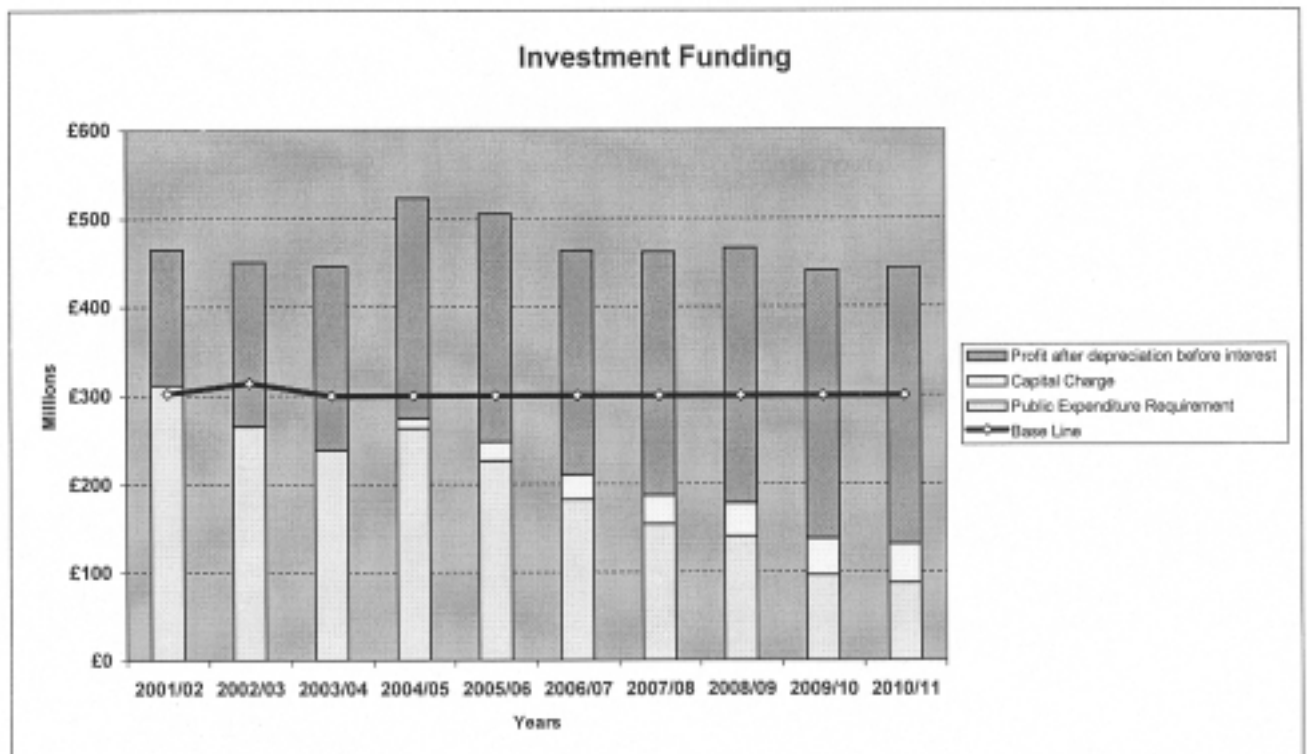
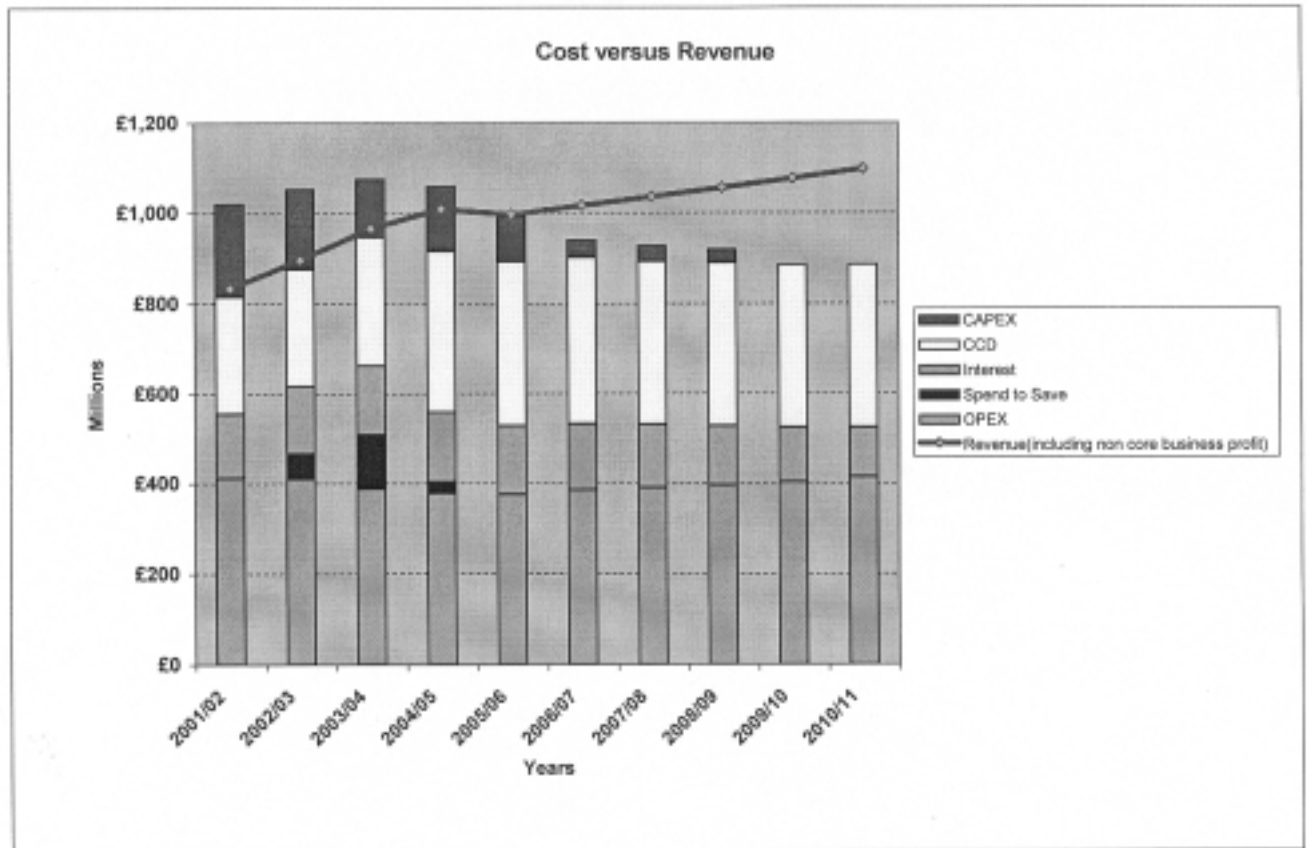
**Water Industry Commissioner For Scotland
Asset Summary**

Net Book Value	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	0.4	0.4	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	539.5	348.4	410.3	74.9	88.1	88.5	91.1	88.2	77.8	73.1	72.6	69.1	67.6	67.9	68.1	68.3	68.3	68.5	68.3
4 years	26.0	19.4	1.6	3.1	4.1	4.9	5.6	5.5	5.1	4.8	4.7	4.5	4.5	4.4	4.5	4.5	4.5	4.5	4.5
5 years	58.3	41.4	57.5	13.8	16.8	18.5	19.9	19.6	18.1	16.9	16.0	15.1	14.7	14.5	14.4	14.4	14.4	14.4	14.4
6 years	165.1	117.7	76.2	19.0	21.1	22.5	23.9	24.2	22.2	21.1	20.2	19.2	18.6	18.3	18.2	18.2	18.3	18.3	18.3
7 years	-	36.1	32.8	34.0	30.2	27.4	25.9	25.8	29.7	29.7	30.1	30.6	31.1	31.5	32.0	32.5	33.0	33.5	34.0
10 years	25.7	45.6	48.8	97.8	111.9	123.3	135.2	142.8	144.3	144.9	144.3	140.9	137.0	132.4	128.9	126.3	124.9	124.2	123.8
15 years	-	0.5	2.5	8.2	7.7	7.4	7.0	6.7	6.4	6.2	6.0	5.9	5.8	5.7	5.8	5.8	5.0	6.2	6.3
20 years	68.0	118.1	129.6	283.6	341.7	393.3	448.3	492.1	519.4	543.2	564.4	577.5	588.7	598.0	605.3	610.5	613.5	614.2	612.6
25 years	142.6	203.6	252.0	324.7	369.3	409.3	452.4	487.3	510.0	530.3	548.9	561.7	573.3	583.8	593.1	601.1	607.7	612.9	616.6
30 years	-	-	-	39.9	39.2	38.5	37.9	37.4	36.9	36.5	36.1	35.8	35.6	35.3	35.3	35.5	35.5	35.9	36.3
40 years	2.7	6.5	9.8	218.0	233.9	248.6	264.7	278.3	288.0	297.2	306.1	313.2	320.2	327.1	333.9	340.4	346.8	353.0	359.0
60 years	309.6	491.2	577.9	786.0	847.9	905.7	966.6	1,023.3	1,084.6	1,104.1	1,124.8	1,175.3	1,207.5	1,259.2	1,270.4	1,301.0	1,331.0	1,360.2	1,388.6
80 years	-	0.7	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.2	0.2	0.2
100 years	-	0.3	0.4	0.3	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.3	0.3	0.8	0.6	0.9	0.2	0.2
Infinite	8.9	80.1	122.1	179.3	229.7	277.8	330.6	378.2	416.3	454.2	491.9	528.8	560.0	594.3	629.3	664.2	698.0	734.7	770.0
Infrastructure Assets	225.3	225.3	306.2	389.1	346.3	303.3	280.0	216.8	173.6	130.3	87.1	43.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Spend to Save - Capex	-	-	-	-	10.2	28.8	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	80.9	97.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1,554.0	1,816.2	2,077.3	2,473.4	2,700.2	2,899.7	3,085.2	3,228.1	3,312.1	3,394.4	3,473.2	3,520.6	3,567.3	3,655.1	3,741.3	3,824.8	3,905.3	3,982.5	4,055.0

Water Industry Commissioner For Scotland

Scenario Summary

"Scottish Water"



Water Industry Commissioner For Scotland Balance Sheet

Authority: East of Scotland Water Authority User: RK Model name: Version4 Scenario flag: estbasaccps Date: 11-10-2001 10:44

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Fixed Assets:																			
Tangible Assets	492	590	661	770	814	871	906	945	992	1,038	1,083	1,126	1,168	1,200	1,233	1,267	1,300	1,333	1,364
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	492	590	661	771	814	871	906	945	992	1,038	1,083	1,126	1,168	1,200	1,233	1,267	1,300	1,333	1,364
Current Assets:																			
Stocks	2.18	2.37	2.63	2.51	2.51	2.71	2.87	2.96	3.02	3.08	3.09	3.11	3.12	3.18	3.24	3.31	3.37	3.44	3.50
Debtors	70.07	77.89	76.63	47.37	52.91	57.26	60.64	62.57	63.79	65.03	65.31	65.60	65.88	67.17	68.48	69.81	71.17	72.56	73.98
Cash	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	74.29	80.26	79.26	49.87	55.41	59.97	63.51	65.54	66.81	68.11	68.40	68.70	69.01	70.35	71.72	73.12	74.54	76.00	77.48
Creditors (falling due within one year)	50.37	79.81	66.29	62.32	69.61	75.34	79.79	82.33	83.93	85.56	85.94	86.31	86.69	88.38	90.10	91.86	93.65	95.47	97.34
Net Current Liabilities	23.92	0.46	12.97	12.45	14.20	15.37	16.28	16.80	17.12	17.45	17.53	17.61	17.68	18.03	18.38	18.74	19.10	19.48	19.86
Total Assets Less Current Liabilities	515.65	590.84	674.32	758.06	799.90	855.77	890.21	928.67	975.29	1,020.91	1,065.43	1,108.74	1,150.77	1,181.93	1,214.33	1,247.83	1,280.78	1,313.11	1,344.51
Creditors (amounts falling due after more than one year)	4.28	3.80	3.14	4.99	5.57	6.03	6.38	6.59	6.71	6.84	6.87	6.90	6.94	7.07	7.21	7.35	7.49	7.64	7.79
Provisions for liabilities and charges	10.95	7.46	17.98	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	500.42	579.57	653.20	743.08	794.33	849.75	883.83	922.08	968.57	1,014.06	1,058.56	1,101.83	1,143.84	1,174.86	1,207.12	1,240.49	1,273.29	1,305.47	1,336.72
Capital and Reserves																			
Government and Other Loans	527.35	605.98	682.42	719.55	753.48	790.76	788.86	784.65	776.68	763.85	751.68	739.96	730.37	693.74	652.43	606.08	554.29	496.76	433.03
Capital Reserve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revaluation Reserve	0.00	0.00	0.00	67.94	78.97	90.34	102.44	115.33	129.13	143.83	159.40	175.82	193.09	210.60	228.82	247.53	266.74	286.44	306.60
Income and Expenditure Account	26.94	26.42	29.22	44.42	38.12	31.35	7.47	22.10	62.76	106.39	147.48	186.05	220.38	270.52	325.87	386.87	452.25	522.28	597.09
TOTAL	500.41	579.56	653.20	743.08	794.33	849.75	883.83	922.08	968.57	1,014.06	1,058.56	1,101.83	1,143.84	1,174.86	1,207.12	1,240.49	1,273.29	1,305.47	1,336.72

Water Industry Commissioner For Scotland Cashflow Statement

Date: 11-10-2001 10:44

Scenario flag: ERM/UNIC/PS

Model name: Version4

User: RK

Authority: East of Scotland Water Authority

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	East of Scotland Water Authority												16/17		
			02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14		14/15	15/16
Operating Profit	68.03	34.75	68.85	84.55	82.41	79.55	90.82	92.53	88.76	85.27	60.08	93.64	96.39	99.33	100.74	102.14	103.39
Add Back Depreciation	27.36	44.00	45.72	50.64	51.11	51.66	50.10	52.33	54.86	57.12	59.37	59.12	58.58	57.90	58.80	59.72	60.84
Amortisation of grants and contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	22.10	46.23	39.24	37.26	53.29	62.28	57.11	57.26	57.40	57.47	57.53	46.44	46.45	46.41	46.31	46.20	46.03
Change in Working Capital	2.66	19.29	7.67	1.63	1.26	0.72	0.45	0.46	0.11	0.11	0.11	0.48	0.49	0.50	0.51	0.52	0.53
Exceptional items (Spend to Save OPEX)	23.65	-	12.42	26.39	7.76	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	91.18	144.26	133.72	147.68	180.31	194.23	198.48	202.57	201.15	199.96	197.09	199.68	201.92	204.14	206.37	208.58	210.79
Investment Sources and Uses of Funds																	
Infrastructure Renewal	22.10	31.65	24.67	22.68	38.72	47.70	42.53	42.68	42.82	42.89	42.95	46.44	46.45	46.41	46.31	46.20	46.03
Quality Related Investment	99.80	99.76	88.20	100.02	88.93	92.34	97.82	98.16	98.49	98.65	98.80	73.11	73.12	73.05	72.90	72.73	72.46
Other Investment (Spend to Save CAPEX)	-	-	4.66	10.87	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	1.60	-	1.13	1.15	1.18	1.21	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	120.30	131.41	116.39	132.42	126.47	138.83	140.35	140.84	141.31	141.54	141.75	119.55	119.57	119.46	119.22	118.93	118.49
Financing Sources and Uses of Funds																	
Interest Paid	47.37	49.95	51.26	52.54	51.94	51.19	50.16	48.90	47.67	46.69	45.75	43.51	41.04	38.33	35.36	32.11	28.57
Taxation Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued	35.76	14.14	17.14	17.14	17.14	16.25	16.25	16.25	16.25	20.94	20.94	20.94	20.94	20.94	20.94	20.94	20.94
Debt Repaid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Assumed	112.25	51.23	51.07	54.41	15.23	12.04	8.28	3.42	4.09	9.21	11.35	15.69	20.37	23.42	30.85	36.60	42.79

Water Industry Commissioner For Scotland Debt and Capital Summary

Date: 11-10-2001 10-
Scenario flag: ERBABDC3P3
Model name: Version4
User: RK
Authority: East of Scotland Water Authority
Existing Debt

Interest Rate/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	-	-	-	-	-	-	-	-	-	-	6.67	6.67	6.67	6.67	6.67	6.67	6.67
5.5%	19.88	-	-	-	-	0.03	0.03	0.03	0.03	0.03	1.86	1.86	1.86	1.86	1.86	1.86	1.86
6.5%	-	-	-	-	-	-	-	-	-	-	1.62	1.62	1.62	1.62	1.62	1.62	1.62
7.5%	15.00	10.00	14.66	14.66	14.66	7.09	7.09	7.09	7.09	7.09	3.10	3.10	3.10	3.10	3.10	3.10	3.10
8.5%	-	1.94	1.01	1.01	1.01	3.55	3.55	3.55	3.55	3.55	1.15	1.15	1.15	1.15	1.15	1.15	1.15
9.5%	0.31	1.00	0.77	0.77	0.77	1.42	1.42	1.42	1.42	1.42	3.90	3.90	3.90	3.90	3.90	3.90	3.90
10.5%	0.52	1.14	0.66	0.66	0.66	2.81	2.81	2.81	2.81	2.81	2.34	2.34	2.34	2.34	2.34	2.34	2.34
11.5%	0.05	0.05	0.04	0.04	0.04	1.10	1.10	1.10	1.10	1.10	0.30	0.30	0.30	0.30	0.30	0.30	0.30
12.5%	-	-	-	-	-	-	0.26	0.26	0.26	0.26	-	-	-	-	-	-	-
13.5%	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.5%	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Repayment	35.8	14.1	17.1	17.1	17.1	16.3	16.3	16.3	16.3	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
Outstanding Principal	570.2	556.1	538.9	521.8	504.7	488.4	472.2	455.9	439.7	418.7	397.8	376.9	355.9	335.0	314.1	293.1	272.2

Interest Payable On Existing Debt	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.00	6.00	5.40	5.10	4.80	4.50	4.20
5.5%	3.24	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.04	2.04	1.94	1.84	1.74	1.63	1.53
6.5%	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.10	2.00	1.89	1.79	1.68	1.58	1.47
7.5%	12.17	11.05	10.30	9.20	8.10	7.00	6.47	5.94	5.41	4.88	4.64	4.41	4.18	3.95	3.71	3.48	3.25
8.5%	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.68	3.34	3.26	3.26	3.26	3.26	3.26	3.26
9.5%	8.66	8.66	8.63	8.46	8.39	8.32	8.18	7.91	7.78	7.41	7.41	7.41	7.04	6.67	6.30	5.93	5.56
10.5%	6.72	6.67	6.55	6.48	6.41	6.34	6.04	5.75	5.42	5.16	4.91	4.67	4.42	4.18	3.93	3.69	3.44
11.5%	1.27	1.26	1.26	1.25	1.25	1.24	1.24	1.11	0.99	0.86	0.74	0.70	0.67	0.63	0.56	0.53	0.49
12.5%	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.10	0.07	0.03	-	-	-	-	-	-	-
13.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
14.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Interest (£000s)	44.4	42.1	41.0	39.6	38.3	37.0	35.5	34.1	32.7	31.3	29.8	28.3	26.8	25.3	23.8	22.3	20.8

New Debt/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Coupon	2.3%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
New Principal	112.2	51.2	51.2	54.4	51.2	12.0	8.3	3.4	4.1	9.2	11.3	15.7	20.4	25.4	30.9	36.6	42.8
Cumulative New Principal	112.2	163.5	214.5	269.0	284.2	296.2	304.5	307.9	312.0	321.2	332.6	346.3	366.7	393.1	425.0	461.6	503.4
Interest Payable	2.58	7.85	10.30	12.91	13.64	14.72	14.62	14.98	14.98	15.42	15.96	15.96	14.23	13.01	11.53	9.78	7.72
New Principal	112.2	163.5	214.5	269.0	284.2	296.2	304.5	307.9	312.0	321.2	332.6	346.3	366.7	393.1	425.0	461.6	503.4
Old Principal	570.2	556.1	538.9	521.8	504.7	488.4	472.2	455.9	439.7	418.7	397.8	376.9	355.9	335.0	314.1	293.1	272.2
Total Outstanding Debt	682.5	719.6	753.5	790.8	786.9	784.7	776.7	763.9	751.7	740.0	730.4	693.7	652.4	606.1	554.3	496.8	433.0

Debt Write Off Granted/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	7%	7%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%	6%	6%	6%	7%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Debt Converted to Equity/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6.94%	6.94%	6.80%	6.64%	6.58%	6.52%	6.46%	6.40%	6.34%	6.31%	6.26%	6.27%	6.2%	6.32%	6.38%	6.46%	6.60%
Dividend	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Water Industry Commissioner For Scotland
Asset Summary

Cost Revaluation in the year	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	-	-	-	1.2	1.1	1.1	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.6
4 years	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
5 years	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
6 years	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
7 years	-	-	-	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 years	-	-	-	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.9
15 years	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
20 years	-	-	-	1.6	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.7	3.9	4.1	4.3	4.1	4.0	3.9	3.2
25 years	-	-	-	0.4	0.6	0.8	1.0	1.2	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
30 years	-	-	-	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.0	0.9	0.8
40 years	-	-	-	5.9	5.9	4.2	4.4	4.7	5.0	5.2	5.3	5.9	5.9	5.9	5.9	5.8	5.7	5.8	5.7
60 years	-	-	-	3.7	3.9	3.9	3.7	3.7	3.7	3.7	3.7	3.8	4.0	4.0	4.0	4.0	4.0	4.0	3.9
80 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infinite	-	-	-	0.2	3.9	3.5	3.9	3.2	2.7	3.1	1.9	1.3	1.1	1.1	0.7	0.7	0.7	0.7	0.7
Infrastructure Assets	-	-	-	4.3	3.9	3.5	3.9	3.2	2.7	3.1	1.9	1.3	1.1	1.1	0.7	0.7	0.7	0.7	0.7
Spend to Slave - Capex	-	-	-	-	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	20.4	21.1	21.6	22.2	22.5	23.1	23.7	24.6	25.0	25.1	25.1	25.7	26.3	27.0	27.7	28.4
Cost Revaluation (cumulative)	-	-	-	90.0	110.4	131.6	153.1	175.3	197.8	220.9	244.6	269.0	293.9	319.0	344.8	371.1	398.1	425.9	454.3
Disposals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 year	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	1.2	0.3	1.3	20.7	21.0	39.0	15.7	17.8	15.8	16.4	17.4	17.4	17.5	17.5	17.6	13.0	13.0	13.0	13.0
4 years	0.0	0.0	0.0	0.2	0.2	0.2	1.3	0.9	1.1	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.8
5 years	1.2	6.3	2.1	2.3	2.3	2.4	2.4	4.6	1.9	2.2	1.9	2.0	2.1	2.1	2.1	2.1	2.1	1.6	1.6
6 years	-	-	-	2.0	2.0	2.0	2.0	2.1	4.3	1.9	2.2	1.9	2.0	2.1	2.1	2.2	2.2	2.2	1.6
7 years	-	-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-
10 years	-	-	-	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.1	4.2	4.2	4.2	8.1	7.2	7.5	7.9	8.0
15 years	-	-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
20 years	-	-	-	4.5	4.6	4.7	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.7
25 years	-	-	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
30 years	-	-	-	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.9	3.9	4.0
40 years	-	-	-	9.9	10.0	10.2	10.3	10.5	10.6	10.8	11.0	11.1	11.3	11.5	11.6	11.8	12.0	12.0	12.3
60 years	-	-	-	3.8	3.9	4.0	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	4.7	4.8
80 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure Assets	-	-	-	56.3	51.6	50.0	66.7	76.2	71.4	72.0	72.6	73.1	73.6	47.1	47.1	47.1	47.0	46.9	46.7
Spend to Slave - Capex	-	-	-	-	-	-	4.9	11.4	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.4	6.5	3.4	111.9	104.2	121.1	120.9	141.3	123.2	122.6	124.0	124.9	134.2	103.1	104.5	99.4	99.7	99.9	98.9

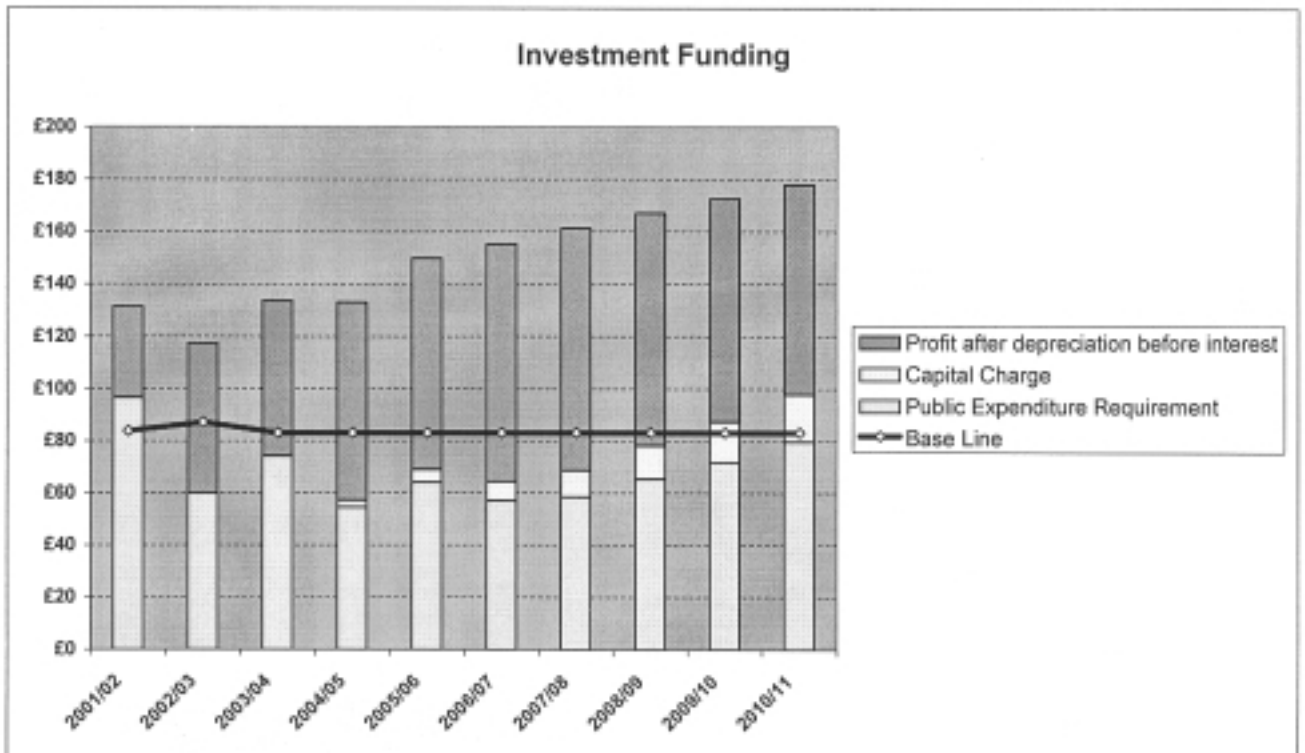
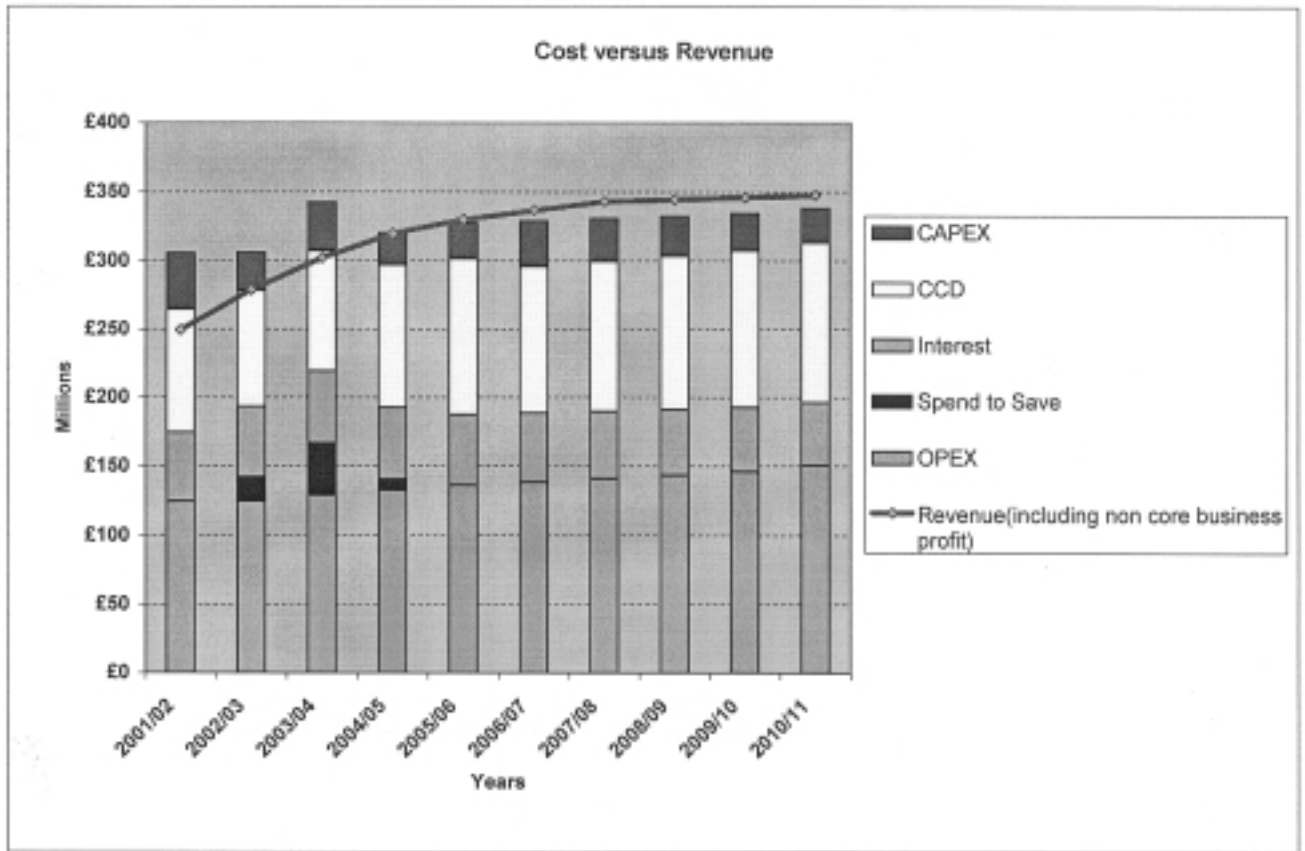
**Water Industry Commissioner For Scotland
Asset Summary**

Net Book Value	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	324.0	37.9	392.4	40.0	37.5	37.6	37.4	37.4	36.6	39.3	39.7	40.1	40.4	37.9	36.7	37.0	37.4	37.2	36.3
4 years	12.9	17.1	0.9	0.9	1.3	1.7	1.8	1.8	1.6	1.6	1.9	1.9	1.9	1.7	1.6	1.6	1.7	1.7	1.5
5 years	10.9	39.8	62.2	62.2	82	83	84	85	87.7	89	89	10.1	10.2	10.2	8.6	8.3	8.4	8.2	8.6
6 years	91.2	110.6	79.4	107.7	106.6	95	103	102	109	101	103	101	102	102	91	97	96	92	97
7 years	-	-	-	37.7	35.4	35.1	41.3	42.8	45.8	47.8	49.0	50.1	50.9	49.8	48.7	47.8	47.0	46.3	45.8
10 years	-	-	-	5.8	5.2	5.2	5.0	4.8	4.6	4.4	4.3	4.2	4.2	4.2	4.2	4.2	4.4	4.4	4.7
15 years	-	-	-	98.2	111.8	126.9	139.3	151.8	164.6	176.9	188.5	199.3	209.4	213.8	217.6	220.7	223.2	224.9	225.9
20 years	-	-	-	22.9	35.2	48.8	60.4	72.1	84.2	95.9	107.2	118.0	128.3	134.3	139.9	145.1	149.7	153.8	157.4
25 years	-	-	-	39.9	39.2	38.5	37.9	37.4	36.9	36.5	36.1	35.8	35.6	35.5	35.5	35.5	35.7	35.9	36.3
30 years	-	-	-	194.2	196.6	199.7	202.1	204.8	207.8	210.9	214.0	217.2	220.4	222.5	224.6	226.7	229.0	231.4	233.8
40 years	-	-	-	169.4	185.0	203.6	218.2	234.3	251.4	268.4	285.5	302.6	319.6	331.9	344.1	356.3	368.3	380.3	392.1
60 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80 years	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
100 years	-	-	-	13.2	25.0	38.6	50.9	63.8	77.7	91.8	106.2	120.8	135.6	147.3	159.2	171.2	183.4	195.7	208.2
Infrastructure Assets	52.8	52.8	84.8	131.2	116.8	102.3	87.7	73.1	58.5	43.9	29.4	14.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Spend to Save - Capex	-	-	-	-	3.2	9.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3	-	32.1	51.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	491.7	590.4	661.3	770.5	814.0	871.1	906.4	945.4	992.4	1,038.3	1,082.9	1,126.3	1,168.4	1,199.9	1,232.7	1,266.5	1,299.8	1,332.5	1,364.3

Water Industry Commissioner For Scotland

Scenario Summary

"East of Scotland Water"



Water Industry Commissioner For Scotland Income and Expenditure Statement

Authority: East of Scotland Water Authority

User: RK

Model Name: Public Funding A14

Scenario flag: E3R3B3J3G3F3

Date: 11-10-2001 10:47

	Audited Actuals 88/89	Audited Actuals 89/90	Audited Actuals 99/00	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Customer Revenue	194.0	207.7	232.2	246.3	278.5	308.8	343.3	342.6	381.2	370.1	376.1	388.4	397.9	405.7	413.6	421.7	428.9	438.3	446.9
Revenue Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Depreciation	20.95	25.81	27.4	44.0	45.7	50.6	51.1	51.7	50.1	52.3	54.9	57.1	59.4	58.1	56.6	57.9	58.6	59.7	60.8
Infrastructure Depreciation	21.1	21.8	22.1	39.2	39.2	37.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
Total Depreciation	42.05	47.61	49.5	83.2	84.9	87.9	104.6	107.0	103.4	105.6	108.2	110.6	112.6	111.4	110.3	111.2	111.9	113.0	114.1
Manpower Costs (less capitalisation)	35.19	39.53	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
Materials and Consumables	56.85	60.79	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92	44.92
Other Operational Costs	10.45	12.93	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78	16.78
Revenue Grant pre 1996	0.27	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortisation of Grants and Contributions	111.88	109.08	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97	101.97
Base Direct Opex	-	-	2.55	5.16	7.84	7.84	10.59	13.40	16.28	18.24	22.27	25.38	28.50	31.62	34.74	37.85	40.97	44.09	47.21
Initiation Increment to Base Direct Opex	-	-	-	0.79	0.57	0.57	0.36	0.44	0.44	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Additional Level of service costs	-	-	-	104.52	102.13	109.81	112.56	115.37	118.25	121.21	124.24	127.35	130.53	133.79	137.14	140.57	144.08	147.68	151.39
Initiation Increment to level of service addition	-	-	-	3.21	13.14	15.16	16.40	17.69	20.36	23.07	25.81	28.56	31.09	32.41	32.41	32.41	32.41	32.41	32.41
Checkoff efficiency target	-	-	-	101.31	92.99	94.65	96.15	97.68	97.89	98.74	98.43	98.77	100.72	102.70	104.73	106.80	108.92	111.09	113.29
Controllable Opex (inc. Init. less efficiencies) - memo line	111.58	109.08	101.97	101.31	94.82	96.35	98.78	101.23	104.08	105.74	105.74	107.51	110.96	114.51	118.18	121.97	125.83	129.91	134.07
Direct operating sub-totals	1.30	9.20	12.77	22.44	26.54	30.64	30.80	30.95	30.95	30.95	30.95	30.95	30.95	30.95	30.95	30.95	30.95	30.95	30.95
PFI Charge	-	-	-	0.56	1.45	2.35	3.20	4.07	4.94	5.84	6.75	7.67	8.57	9.46	10.35	11.24	12.12	13.01	13.91
Initiation Increment to PFI Charge	-	-	-	0.56	1.45	2.35	3.20	4.07	4.94	5.84	6.75	7.67	8.57	9.46	10.35	11.24	12.12	13.01	13.91
Operating Costs	154.68	168.49	184.20	214.64	209.77	217.24	237.16	250.20	245.92	250.45	257.21	267.74	279.52	290.41	299.30	308.94	318.07	327.96	338.86
Net profit from non-core business activities	39.34	42.21	88.03	34.75	68.89	89.02	106.93	102.41	116.31	120.33	124.14	128.43	133.21	143.80	149.89	155.77	158.05	158.54	160.90
Operating Profit	38.44	43.85	47.97	49.95	51.26	52.25	50.95	48.94	45.88	43.00	39.66	36.07	31.98	26.41	20.40	13.91	6.92	0.61	8.71
Interest Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exceptional Items/One-off costs	0.24	0.81	0.12	1.15	1.13	1.15	1.16	1.21	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Opex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	1.15	-1.17	-2.87	-15.19	6.30	12.63	49.80	55.97	70.43	77.34	84.48	92.36	99.25	113.39	128.19	138.66	149.13	159.15	169.61
Taxation paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Finalised Profit	1.15	-1.17	-2.87	-15.19	6.30	12.63	49.80	55.97	70.43	77.34	84.48	92.36	99.25	113.39	128.19	138.66	149.13	159.15	169.61

Water Industry Commissioner For Scotland Balance Sheet

Authority: East of Scotland Water Authority

User: RK

Model name: Public Funding Alt4 Scenario flag: ERSABASCAP3

Date: 11-10-2001 10:47

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Fixed Assets:																			
Tangible Assets	492	590	661	770	814	871	906	945	992	1,038	1,083	1,126	1,168	1,200	1,233	1,267	1,300	1,333	1,364
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	492	590	661	771	814	871	906	945	992	1,038	1,083	1,126	1,168	1,200	1,233	1,267	1,300	1,333	1,364
Current Assets:																			
Stocks	2.18	2.37	2.63	2.51	2.51	2.76	3.09	3.17	3.25	3.33	3.41	3.50	3.58	3.65	3.72	3.79	3.87	3.94	4.02
Debtors	70.07	77.89	76.63	47.37	52.91	58.30	65.22	66.99	68.63	70.31	72.03	73.80	75.60	77.08	78.58	80.12	81.68	83.28	84.90
Cash	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	74.29	80.26	79.26	49.87	55.41	61.06	68.31	70.17	71.88	73.64	75.44	77.29	79.19	80.73	82.30	83.91	85.55	87.22	88.93
Creditors (falling due within one year)	50.37	79.81	66.29	62.32	69.61	76.71	85.82	88.15	90.30	92.51	94.78	97.10	99.48	101.42	103.40	105.42	107.47	109.57	111.72
Net Current Liabilities	23.92	0.46	12.97	12.45	14.20	15.65	17.51	17.98	18.42	18.87	19.33	19.81	20.29	20.69	21.09	21.50	21.92	22.35	22.79
Total Assets Less Current Liabilities	515.65	590.84	674.32	758.06	799.90	855.49	888.98	927.48	973.99	1,019.49	1,063.63	1,106.54	1,148.16	1,179.27	1,211.62	1,245.07	1,277.96	1,310.23	1,341.58
Creditors (amounts falling due after more than one year)	4.28	3.80	3.14	4.99	5.57	6.14	6.87	7.05	7.22	7.40	7.58	7.77	7.96	8.11	8.27	8.43	8.60	8.77	8.94
Provisions for liabilities and charges	10.95	7.46	17.98	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	500.42	579.57	653.20	743.08	794.33	849.36	882.11	920.43	966.76	1,012.09	1,056.04	1,098.77	1,140.20	1,171.15	1,203.34	1,236.63	1,269.36	1,301.46	1,332.64
Capital and Reserves																			
Government and Other Loans	527.35	605.98	682.42	719.55	753.48	784.60	755.66	725.41	687.51	640.81	584.72	518.66	443.58	337.63	222.42	97.33	38.29	185.03	343.62
Capital Reserve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revaluation Reserve	0.00	0.00	0.00	67.94	78.97	90.34	102.44	115.33	129.13	143.83	159.40	175.82	193.09	210.60	228.82	247.53	266.74	286.44	306.60
Income and Expenditure Account	26.94	26.42	29.22	44.41	38.12	25.58	24.02	79.69	150.12	227.45	311.93	404.29	503.54	622.92	752.11	891.77	1,040.91	1,200.05	1,369.66
TOTAL	500.41	579.56	653.20	743.08	794.33	849.36	882.11	920.43	966.76	1,012.09	1,056.04	1,098.77	1,140.20	1,171.15	1,203.34	1,236.63	1,269.36	1,301.46	1,332.64

Water Industry Commissioner For Scotland Cashflow Statement

Date: 11-10-2001 10:47

Scenario flag: ERB03JGDFP

Model name: Public Funding A1k4

User: RK

Authority: East of Scotland Water Authority

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	02/03												16/17		
			02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14		14/15	15/16
Operating Profit	68.03	34.75	68.85	90.02	106.53	102.81	116.31	120.33	124.14	128.43	131.23	145.80	149.59	153.57	156.05	158.54	160.90
Add Back Depreciation	27.36	44.00	45.72	50.64	51.11	51.68	50.10	52.33	54.88	57.12	59.37	59.12	58.58	57.90	58.80	59.72	60.84
Amortisation of grants and contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	22.10	46.23	39.24	37.26	53.29	62.28	57.11	57.26	57.40	57.47	57.53	46.44	46.45	46.41	46.31	46.20	46.03
Change in Working Capital	2.66	19.29	7.67	2.02	2.59	0.66	0.61	0.63	0.64	0.66	0.68	0.55	0.56	0.57	0.58	0.60	0.61
Exceptional items (Spend to Save OPEX)	-	23.65	-	26.39	7.76	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	91.18	144.27	133.72	153.54	205.76	217.42	224.13	230.54	237.06	243.67	248.81	251.92	255.18	258.46	261.75	265.06	268.38
Investment Sources and Uses of Funds																	
Infrastructure Renewal	22.10	31.65	24.67	22.68	38.72	47.70	42.53	42.68	42.82	42.89	42.95	46.44	46.45	46.41	46.31	46.20	46.03
Quality Related Investment	99.80	99.76	88.20	100.02	88.93	92.34	97.82	98.16	98.49	98.65	98.80	73.11	73.12	73.05	72.90	72.73	72.46
Other Investment (Spend to Save CAPEX)	-	-	4.66	10.87	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sales of tangible fixed assets	1.60	-	1.13	1.15	1.18	1.21	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	120.30	131.41	116.39	132.42	126.47	138.83	140.35	140.84	141.31	141.54	141.75	119.55	119.57	119.46	119.22	118.93	118.49
Financing Sources and Uses of Funds																	
Interest Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxation Paid	47.37	49.95	51.26	52.25	50.35	48.34	45.88	43.00	39.66	36.07	31.98	26.41	20.40	13.91	6.92	0.61	8.71
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	35.76	14.14	17.14	17.14	17.14	16.25	16.25	16.25	16.25	20.94	20.94	20.94	20.94	20.94	20.94	20.94	20.94
New Debt Assumed	112.25	51.23	51.06	48.26	11.81	14.00	21.65	30.46	39.84	45.12	54.14	85.02	94.27	104.15	114.68	125.80	137.66

**Water Industry Commissioner For Scotland
Debt and Capital Summary**

Existing Debt Authority: East of Scotland Water Authority User: RK Model name: Public Funding All4 Scenario flag: ERPSTATSCAPA Date: 11-10-2001 10-

Interest Rate/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	-	-	-	-	-	-	-	-	-	-	6.67	6.67	6.67	6.67	6.67	6.67	6.67
5.5%	19.88	-	-	-	-	0.03	0.03	0.03	0.03	0.03	1.86	1.86	1.86	1.86	1.86	1.86	1.86
6.5%	-	-	-	-	-	-	-	-	-	-	1.62	1.62	1.62	1.62	1.62	1.62	1.62
7.5%	15.00	10.00	14.66	14.66	14.66	7.09	7.09	7.09	7.09	7.09	3.10	3.10	3.10	3.10	3.10	3.10	3.10
8.5%	-	1.94	1.01	1.01	1.01	3.55	3.55	3.55	3.55	3.55	1.15	1.15	1.15	1.15	1.15	1.15	1.15
9.5%	0.31	1.00	0.77	0.77	0.77	1.42	1.42	1.42	1.42	1.42	3.90	3.90	3.90	3.90	3.90	3.90	3.90
10.5%	0.52	1.14	0.66	0.66	0.66	2.81	2.81	2.81	2.81	2.81	2.34	2.34	2.34	2.34	2.34	2.34	2.34
11.5%	0.05	0.05	0.04	0.04	0.04	1.10	1.10	1.10	1.10	1.10	0.30	0.30	0.30	0.30	0.30	0.30	0.30
12.5%	-	-	-	-	-	0.26	0.26	0.26	0.26	0.26	-	-	-	-	-	-	-
13.5%	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.5%	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Repayment	35.8	14.1	17.1	17.1	17.1	16.3	16.3	16.3	16.3	16.3	20.9	20.9	20.9	20.9	20.9	20.9	20.9
Outstanding Principal	570.2	556.1	538.9	521.8	504.7	488.4	472.2	455.9	439.7	418.7	397.8	376.9	355.9	335.0	314.1	293.1	272.2

Interest Payable On Existing Debt	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.00	6.00	5.70	5.40	4.80	4.50	4.20
5.5%	3.24	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.04	1.94	1.74	1.63	1.53	1.43
6.5%	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.10	2.00	1.79	1.68	1.58	1.47
7.5%	12.17	11.05	10.30	9.20	8.10	7.00	6.47	5.94	5.41	4.88	4.64	4.41	4.18	3.95	3.71	3.48	3.25
8.5%	3.68	3.68	3.51	3.43	3.34	3.26	2.96	2.65	2.35	2.05	1.95	1.95	1.76	1.66	1.56	1.46	1.37
9.5%	8.66	8.63	8.54	8.46	8.39	8.32	8.18	8.05	7.91	7.78	7.41	7.04	6.67	6.30	5.93	5.56	5.18
10.5%	6.72	6.67	6.55	6.48	6.41	6.34	6.04	5.75	5.45	5.16	4.91	4.67	4.42	4.18	3.93	3.69	3.44
11.5%	1.27	1.26	1.26	1.25	1.25	1.24	1.11	1.09	0.86	0.74	0.70	0.67	0.63	0.60	0.56	0.53	0.49
12.5%	0.13	0.13	0.13	0.13	0.13	0.13	0.10	0.07	0.03	-	-	-	-	-	-	-	-
13.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
14.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Interest (€000s)	44.4	42.1	41.0	39.6	38.3	37.0	35.5	34.1	32.7	31.3	29.8	28.3	26.8	25.3	23.8	22.3	20.8

New Debt/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Coupon	2.3%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
New Principal	112.2	51.2	51.1	48.3	48.3	48.3	21.6	21.6	39.8	45.1	45.1	85.0	85.0	104.2	114.7	125.8	137.7
Cumulative New Principal	112.2	163.5	214.5	262.8	311.1	360.4	382.0	382.0	421.8	466.9	512.0	597.0	682.0	786.2	890.9	995.7	1095.4
Interest Payable	2.58	7.85	10.30	12.61	12.05	11.38	10.34	8.87	6.96	4.80	2.20	-1.88	-6.41	-11.41	-16.91	-22.95	-29.56
New Principal	112.2	163.5	214.5	262.8	311.1	360.4	382.0	382.0	421.8	466.9	512.0	597.0	682.0	786.2	890.9	995.7	1095.4
Old Principal	570.2	556.1	538.9	521.8	504.7	488.4	472.2	455.9	439.7	418.7	397.8	376.9	355.9	335.0	314.1	293.1	272.2
Total Outstanding Debt	682.5	719.6	753.5	784.6	755.7	725.4	687.5	640.8	584.8	518.7	443.6	337.6	222.4	97.3	38.3	185.0	343.6

Debt Write Off Granted/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	8%	9%	14%	-18%	0%	3%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Debt Converted to Equity/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6.94%	6.94%	6.80%	6.65%	6.66%	6.66%	6.67%	6.71%	6.78%	6.95%	7.21%	7.82%	9.17%	14.29%	-18.06%	0.33%	2.53%
Dividend	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Water Industry Commissioner For Scotland Asset Summary

Cost Revaluation in the year	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	
1 year	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	-	-	-	1.2	1.1	1.1	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.6
4 years	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
5 years	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
6 years	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
7 years	-	-	-	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 years	-	-	-	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	0.9
15 years	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
20 years	-	-	-	1.6	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.2	5.2
25 years	-	-	-	0.4	0.6	0.8	1.0	1.2	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.6
30 years	-	-	-	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.0	0.9	0.9
40 years	-	-	-	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.7
60 years	-	-	-	3.7	3.9	4.2	4.4	4.7	5.0	5.2	5.5	5.8	6.1	6.3	6.5	6.8	7.0	7.2	7.5	7.5
80 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infinite	-	-	-	0.2	0.4	0.6	0.8	0.9	1.1	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.7	2.9	3.1	3.1
Infrastructure Assets	-	-	-	4.3	3.9	3.5	3.4	3.2	2.7	2.3	1.9	1.5	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Spend to Save - Capex	-	-	-	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	20.0	20.4	21.1	21.6	22.2	22.5	23.1	23.7	24.3	25.0	25.1	25.7	26.3	27.0	27.7	28.4	28.4
Cost Revaluation (Cumulative)	-	-	-	90.0	110.4	131.6	153.1	175.3	197.8	220.9	244.6	269.0	293.9	319.0	344.8	371.1	398.3	425.9	454.3	454.3
Disposals	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	
1 year	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	1.2	0.3	1.3	20.7	21.0	39.0	15.7	17.8	15.8	16.4	17.4	17.4	17.5	17.5	17.6	13.0	13.0	13.0	13.0	13.0
4 years	0.0	0.0	-	0.2	0.2	0.4	0.2	0.9	1.1	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.8	0.8
5 years	1.2	6.3	2.1	2.3	2.3	2.4	2.4	4.6	1.9	2.2	1.9	2.0	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6
6 years	-	-	-	2.0	2.0	2.0	2.0	2.1	4.3	1.9	2.2	1.9	2.0	2.1	2.1	2.2	2.2	2.2	2.2	1.6
7 years	-	-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-
10 years	-	-	-	3.7	3.8	3.8	3.9	4.0	4.0	4.1	4.1	4.2	12.4	7.2	8.1	7.2	7.5	7.9	8.0	8.0
15 years	-	-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	-
20 years	-	-	-	4.5	4.6	4.7	4.7	4.8	4.9	5.0	5.1	5.2	5.2	5.3	5.3	5.4	5.5	5.6	5.7	-
25 years	-	-	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-
30 years	-	-	-	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.9	3.9	4.0	-
40 years	-	-	-	9.9	10.0	10.2	10.3	10.5	10.6	10.8	11.0	11.1	11.3	11.5	11.6	11.8	12.0	12.2	12.3	-
60 years	-	-	-	3.8	3.9	4.0	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	4.7	4.8	-
80 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
100 years	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
Infinite	-	-	-	58.3	51.6	50.0	66.7	76.2	71.4	72.0	72.6	73.1	73.6	47.1	47.1	47.1	47.0	46.9	46.7	-
Infrastructure Assets	-	-	-	4.9	11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Capex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.4	6.5	3.4	111.9	104.2	121.1	120.9	141.3	123.2	122.6	124.0	124.9	134.2	103.1	104.5	99.4	99.7	99.7	99.3	98.9

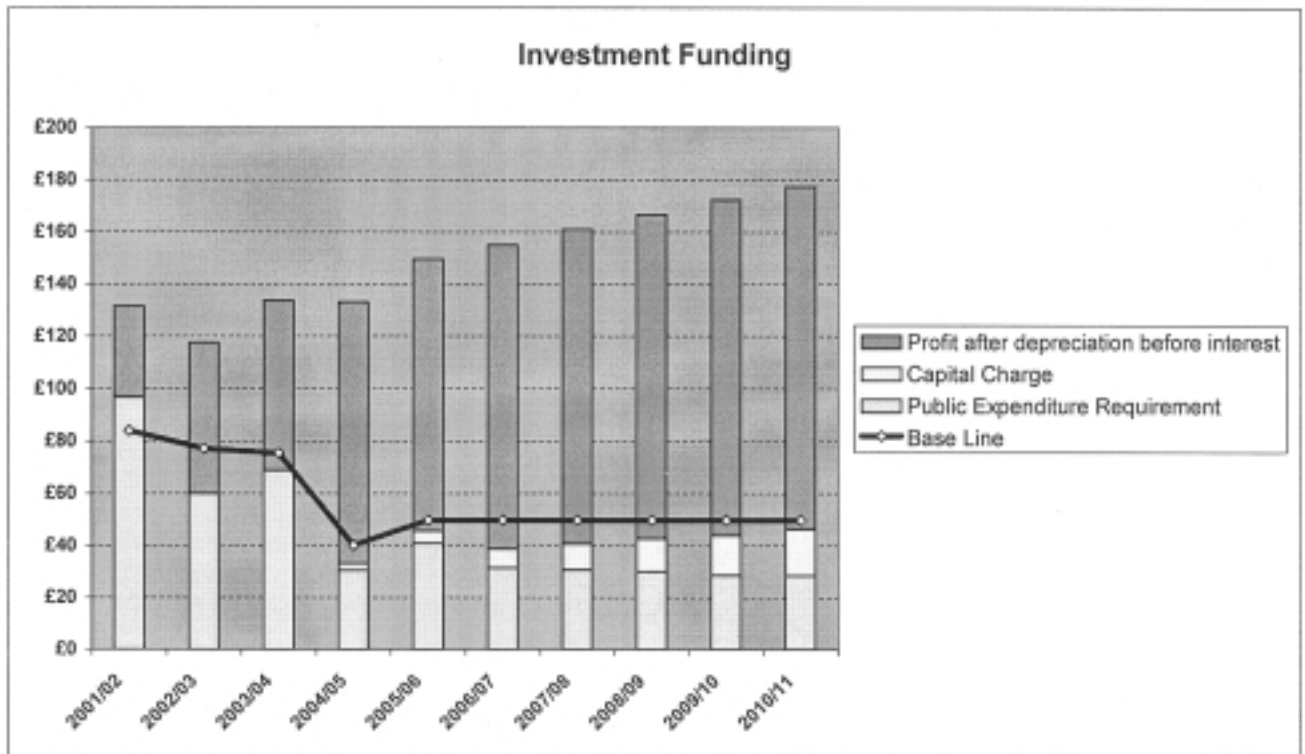
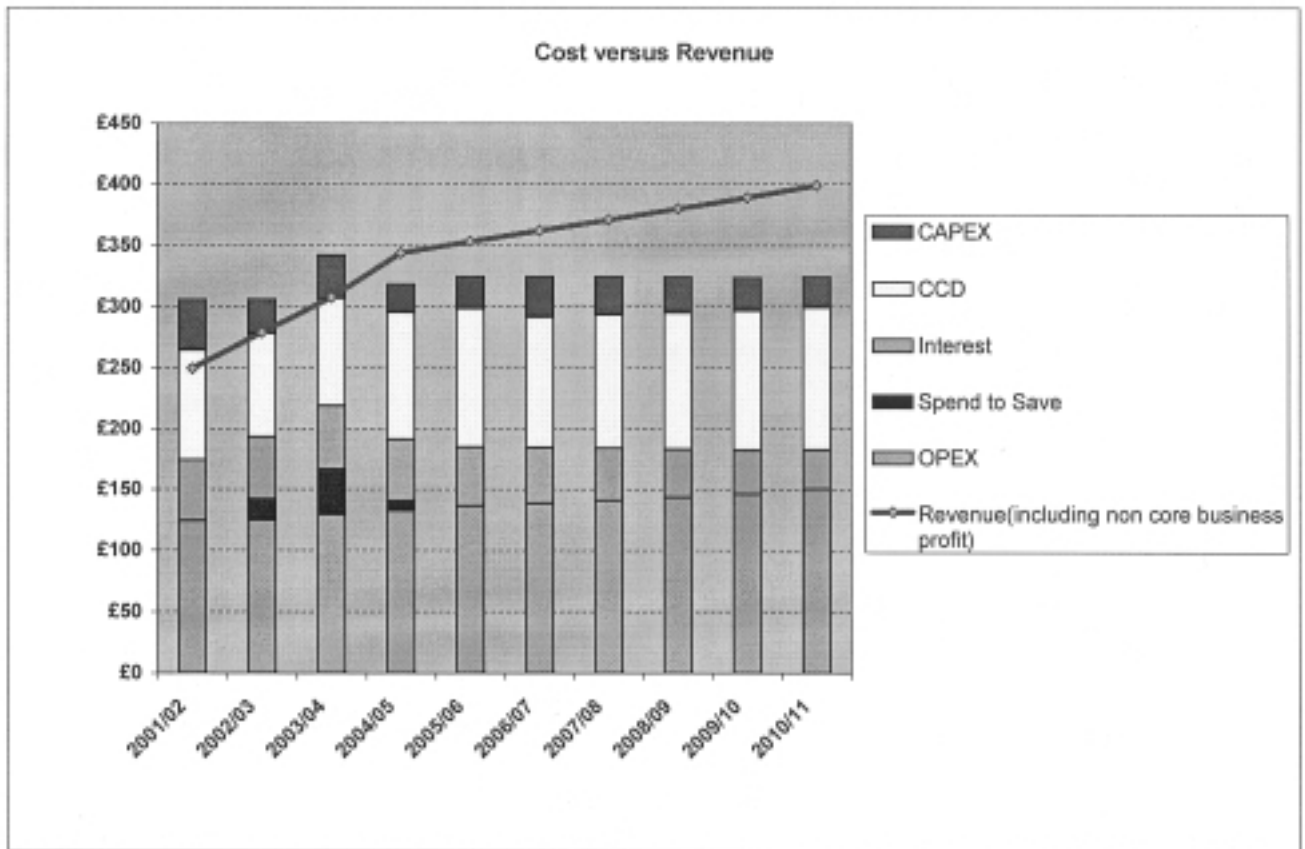
**Water Industry Commissioner For Scotland
Asset Summary**

Net Book Value	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year					0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	324.0	337.9	395.4	40.0	32.3	37.6	37.7	32.4	38.8	39.3	37.2	40.1	49.4	37.8	36.7	37.0	37.4	37.7	38.1
4 years	12.9	17.1		0.9	1.3	1.7	1.8	1.8	3.8	3.8	3.3	4.0	4.9	3.7	3.6	3.7	3.7	3.7	38.1
5 years	10.9	39.8	55.6	8.2	8.7	8.3	8.4	8.6	8.7	8.9	8.3	9.9	9.9	8.7	8.6	8.3	8.4	8.5	8.6
6 years	91.2	110.6	70.4	10.7	10.6	10.6	10.3	10.2	10.0	10.1	10.3	10.1	10.2	8.9	8.6	8.3	8.4	8.5	8.6
7 years				2.7	2.4	2.1	1.9	1.8	1.8	1.8	1.8	1.5	1.8	1.0	0.9	0.7	0.6	0.6	0.7
10 years				33.0	35.8	39.1	41.3	43.4	45.6	47.4	49.0	50.7	50.9	49.8	46.9	47.9	47.0	46.3	45.8
15 years				5.8	5.5	5.2	5.0	4.8	4.6	4.4	4.3	4.2	4.2	4.2	4.2	4.3	4.0	4.0	4.0
20 years				98.2	111.8	126.9	139.3	151.8	164.6	176.9	188.5	199.3	209.4	213.8	217.6	220.7	223.3	224.6	225.2
25 years				22.9	35.2	48.8	60.4	72.1	84.2	95.9	107.2	118.0	128.3	134.3	139.9	145.1	149.7	153.8	157.2
30 years				39.9	39.2	38.5	37.9	37.4	36.9	36.5	36.1	35.8	35.6	35.5	35.3	35.5	35.7	35.9	36.3
40 years				194.2	196.6	199.7	202.1	204.8	207.8	210.9	214.0	217.2	220.4	222.5	224.6	226.7	229.0	231.4	233.8
60 years				169.4	185.0	202.6	218.2	234.3	251.4	268.4	285.5	302.6	319.6	331.9	344.1	356.3	368.3	380.3	392.1
80 years				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 years				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Infinite				13.2	25.0	38.6	50.9	63.8	77.7	91.8	106.2	120.8	135.6	147.3	159.2	171.2	183.4	195.7	208.2
Infrastructure Assets	52.8	52.8	64.8	131.2	116.8	102.3	87.7	73.1	56.5	43.9	29.4	14.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Spent to Save - Capex				3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Other 3																			
Other 4				51.1															
Other 5																			
Other 6																			
Other 7																			
Other 8																			
Other 9																			
Other 10																			
Total	491.7	590.4	661.3	770.5	814.0	871.1	906.4	945.4	992.4	1,038.3	1,082.9	1,126.3	1,168.4	1,199.9	1,232.7	1,266.5	1,299.8	1,332.5	1,364.3

Water Industry Commissioner For Scotland

Scenario Summary

"East of Scotland Water"



Water Industry Commissioner For Scotland Income and Expenditure Statement

Authority: North of Scotland Water Authority

User: RK

Model name: 4.0

Scenario flag: E3R3B1B3C3P3

Date: 11-10-2001 11:30

	Audited Actuals 99/99	Audited Actuals 99/00	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Customer Revenue	137.8	153.9	232.0	272.3	287.2	344.9	346.7	375.7	382.9	384.4	388.0	387.6	385.0	402.6	410.4	418.3	428.3	434.5
Revenue Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Depreciation	14.50	17.20	20.4	26.5	35.8	45.1	52.0	60.9	49.3	52.3	50.2	48.6	47.0	47.2	47.7	48.1	48.0	48.7
Infrastructure Depreciation	11.0	12.1	25.0	43.3	45.7	63.3	66.8	85.6	83.5	83.8	83.7	83.8	72.9	72.9	72.6	72.7	72.5	72.2
Total Depreciation	25.50	29.30	45.40	68.70	81.30	114.40	121.80	138.40	132.80	136.10	133.90	132.40	119.80	120.00	120.30	120.80	121.30	121.90
Manpower Costs (less capitalisation)	35.77	35.52	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58	40.58
Materials and Consumables	5.49	5.56	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34
Other Operational Costs	38.65	45.55	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34
Bad Debts	3.10	3.78	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Revenue Grant pre 1995	0.99	3.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Grants and Contributions	-	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Direct Opex	82.05	85.63	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83
Inflation Increment to Base Direct Opex	-	2.30	4.65	9.30	9.30	12.07	12.07	14.66	17.93	20.09	22.85	25.72	28.66	31.67	34.76	37.92	41.17	44.49
Additional Level of service costs	-	0.420	0.82	1.19	1.19	1.89	1.89	2.58	3.00	3.60	4.20	4.80	5.40	6.00	6.60	7.20	7.80	8.40
Inflation increment to level of service addition	-	0.01	0.04	0.09	0.16	0.25	0.25	0.32	0.39	0.46	0.53	0.60	0.67	0.74	0.81	0.88	0.95	1.02
Controllable Opex (inc. Inflation) - memo line	-	94.12	96.48	96.89	101.36	103.89	106.49	109.15	111.88	114.68	117.55	120.48	123.50	126.58	129.75	132.99	136.32	139.74
Deduct efficiencies target	-	3.63	14.88	14.88	18.56	20.03	22.74	24.74	27.14	29.56	30.75	31.95	33.20	34.48	35.80	37.16	38.56	39.99
Controllable Opex (inc. Inflation) - memo line	-	90.49	81.60	81.78	82.80	83.86	84.72	84.41	84.71	85.10	85.80	86.60	87.53	88.50	89.51	90.55	91.61	92.75
Direct Operating sub-totals	82.05	86.93	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83
Net Profit from non-core business activities	0.70	4.00	27.4	45.00	44.94	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Operating Costs	108.13	119.88	148.34	211.04	224.17	248.85	255.72	279.76	279.06	284.46	274.21	276.83	267.45	270.91	274.67	278.34	282.37	286.46
Operating Profit	29.67	34.22	80.88	81.27	65.05	96.37	90.10	96.07	103.97	99.14	110.98	110.95	127.78	131.91	135.89	140.12	144.14	148.25
Interest Charges	22.63	25.46	32.30	35.80	37.78	38.35	38.17	36.80	34.64	32.31	27.72	22.77	17.34	11.42	4.98	2.04	9.65	17.90
Exceptional Items/One-off costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Opex	-	-	-	9.28	19.69	5.79	-	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	0.89	0.78	1.17	1.18	1.15	1.24	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	7.84	9.62	28.50	17.35	8.77	53.44	51.16	59.28	69.33	66.82	83.26	85.19	110.44	120.49	130.91	142.16	153.79	166.15
Taxation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	7.84	9.62	28.50	17.35	8.77	53.44	51.16	59.28	69.33	66.82	83.26	85.19	110.44	120.49	130.91	142.16	153.79	166.15

Water Industry Commissioner For Scotland Balance Sheet

Authority: North of Scotland Water Authority

User: RK

Model name: 4.0

Scenario flag: EKASB30P3

Date: 11-10-2001 10:49

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Fixed Assets:																			
Tangible Assets	402	453	532	666	757	822	908	969	1,023	1,071	1,112	1,119	1,127	1,149	1,170	1,192	1,213	1,233	1,253
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	403	453	532	666	757	823	908	969	1,023	1,071	1,112	1,119	1,127	1,149	1,170	1,192	1,213	1,233	1,253
Current Assets:																			
Stocks	143	136	125	245	245	258	310	312	338	345	346	347	349	356	362	369	376	384	391
Debtors	2557	3167	3205	4409	5174	5457	6553	7134	7138	7274	7304	7334	7364	7506	7650	7797	7947	8100	8256
Cash	560	203	316	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	3260	3505	3645	4654	5419	5715	6864	6893	7476	7619	7650	7682	7713	7861	8012	8166	8323	8484	8647
Creditors (falling due within one year)	4163	4315	5900	5801	6800	7180	8623	8667	9392	9572	9611	9650	9690	9876	10066	10259	10457	10658	10863
Net Current Liabilities	903	810	2255	1147	1389	1465	1759	1769	1916	1953	1961	1969	1977	2015	2053	2093	2133	2174	2216
Total Assets Less Current Liabilities	39347	44485	50942	65490	74329	80786	89016	95164	1,00426	1,05122	1,09275	1,09919	1,10759	1,12853	1,14976	1,17072	1,19148	1,21168	1,23115
Creditors (amounts falling due after more than one year)	163	438	0.00	464	545	574	690	693	751	766	769	772	775	790	805	821	837	853	869
Provisions for liabilities and charges	580	528	788	1235	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	38604	43519	50155	63791	73784	80212	88326	94470	99674	1,04356	1,08506	1,09147	1,09983	1,12063	1,14170	1,16252	1,18312	1,20315	1,22246
Capital and Reserves																			
Government and Other Loans	33182	37147	42153	48975	56207	60655	62181	61858	59688	55903	51759	42438	32789	22144	10473	2298	16246	31445	47983
Capital Reserve	9499	9499	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479	8479
Revaluation Reserve	0.00	0.00	0.00	5206	6232	7334	8578	9929	11376	12909	14520	16157	17823	19504	21233	22994	24787	26609	28462
Income and Expenditure Account	4078	3127	477	1131	2866	3744	9088	14204	20132	27065	33747	42073	50892	61936	73985	87076	101292	116671	133287
TOTAL	38603	43519	50155	63791	73784	80212	88326	94470	99674	1,04356	1,08506	1,09147	1,09983	1,12063	1,14170	1,16252	1,18312	1,20315	1,22246

Water Industry Commissioner For Scotland Cashflow Statement

Authority: North of Scotland Water Authority User: RK Model name: 4.0 Scenario flag: ER08B3BCP3 Date: 11-10-2001 10:49

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Operating Profit	60.88	48.38	61.27	65.06	96.37	88.10	96.07	103.97	99.14	110.98	110.95	127.78	131.91	135.89	140.12	144.14	148.25
Add Back Depreciation	20.43	26.49	35.76	45.09	51.12	52.03	50.92	49.30	52.34	50.22	48.63	47.00	47.20	47.72	48.13	48.86	49.68
Amortisation of grants and contributions	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	25.00	43.25	45.54	45.68	63.33	69.77	85.58	83.53	83.81	83.68	83.79	72.87	72.89	72.82	72.67	72.50	72.23
Change in Working Capital	12.66	1.96	9.13	1.06	4.10	0.13	2.06	0.51	0.11	0.11	0.11	0.53	0.54	0.55	0.56	0.57	0.58
Exceptional Items (Spend to Save OPEX)	8.71	-	9.26	19.69	5.79	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	110.03	116.16	124.17	137.19	209.13	210.03	234.62	237.31	235.40	244.99	243.49	248.18	252.54	256.97	261.48	266.08	270.75
Investment Sources and Uses of Funds																	
Infrastructure Renewal	43.80	32.25	34.54	34.68	52.33	58.77	74.58	72.53	72.81	72.68	72.79	72.87	72.89	72.82	72.67	72.50	72.23
Quality Related Investment	80.96	119.82	123.82	102.29	134.92	111.09	101.54	92.30	86.84	51.38	51.45	51.51	51.52	51.47	51.37	51.24	51.05
Other Investment (Spend to Save CAPEX)	-	-	3.47	8.11	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	1.58	-	1.15	1.18	1.21	1.24	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	123.17	152.07	160.68	143.89	186.04	168.62	176.12	164.83	161.65	124.06	124.24	124.38	124.40	124.29	124.04	123.74	123.28
Financing Sources and Uses of Funds																	
Interest Paid	26.84	32.30	35.80	37.78	38.35	38.17	36.80	34.64	32.31	27.72	22.77	17.34	11.42	4.98	2.04	9.65	17.90
Taxation Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued/Repaid	10.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	12.43	3.02	6.67	6.67	6.67	9.69	9.69	9.69	9.69	14.15	14.15	14.15	14.15	14.15	14.15	14.15	14.15
New Debt Assumed	62.61	71.23	78.99	51.15	21.93	6.46	12.02	28.16	31.75	79.06	82.33	92.30	102.56	113.55	125.33	137.83	151.21

Water Industry Commissioner For Scotland Debt and Capital Summary

Existing Debt

Authority: North of Scotland Water Authority

User: RK

Model name: 4.0

Scenario flag: ERABASCP3

Date: 11-10-2001 10-

Interest Rate/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	-	-	-	-	-	2.50	2.50	2.50	2.50	2.50	1.89	1.89	1.89	1.89	1.89	1.89	1.89
5.5%	-	-	-	1.67	1.67	1.67	-	-	-	-	1.66	1.66	1.66	1.66	1.66	1.66	1.66
6.5%	10.00	-	1.67	1.67	1.67	0.86	0.86	0.86	0.86	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
7.5%	-	0.07	0.07	1.55	1.55	1.55	-	-	-	7.33	7.33	7.33	7.33	7.33	7.33	7.33	7.33
8.5%	1.52	1.26	1.01	1.01	1.01	1.03	1.03	1.03	1.03	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
9.5%	0.49	0.52	0.22	0.22	0.22	1.83	1.83	1.83	2.68	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
10.5%	0.29	1.11	0.49	0.49	0.49	2.68	2.68	2.68	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
11.5%	0.04	0.04	0.04	0.04	0.04	0.79	0.79	0.79	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
12.5%	0.02	0.02	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-
13.5%	0.00	0.00	0.03	0.03	0.03	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.5%	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Repayment	12.4	3.0	6.7	6.7	6.7	9.7	9.7	9.7	9.7	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Outstanding Principal	359.0	356.0	349.3	342.7	336.0	326.3	316.6	306.9	297.2	283.1	268.9	254.8	240.6	226.5	212.3	198.2	184.0

Interest Payable On Existing Debt	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.13	2.01	1.90	1.79	1.70	1.62	1.53	1.45	1.36	1.28
5.5%	2.20	2.20	2.20	2.11	2.01	1.92	1.92	1.92	1.92	1.92	1.92	1.83	1.74	1.66	1.56	1.46	1.37
6.5%	3.15	2.50	2.50	2.39	2.28	2.17	2.12	2.06	2.06	2.01	1.95	1.86	1.76	1.67	1.58	1.49	1.30
7.5%	11.91	11.90	11.90	11.78	11.67	11.55	11.55	11.55	11.55	11.55	11.55	11.00	10.45	9.90	9.35	8.80	8.25
8.5%	1.51	1.38	1.27	1.18	1.10	1.01	0.92	0.84	0.75	0.66	0.66	0.63	0.60	0.57	0.54	0.50	0.47
9.5%	2.60	2.55	2.50	2.48	2.46	2.44	2.27	2.09	1.92	1.74	1.66	1.66	1.58	1.49	1.41	1.33	1.25
10.5%	2.64	2.60	2.49	2.44	2.39	2.33	2.05	1.77	1.49	1.21	1.15	1.15	1.10	1.04	0.98	0.92	0.86
11.5%	0.46	0.46	0.45	0.45	0.45	0.44	0.35	0.26	0.17	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.05
12.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13.5%	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
14.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Interest (£000s)	26.7	25.9	25.6	25.1	24.6	24.1	23.3	22.5	21.7	20.9	19.9	18.9	17.9	16.9	15.9	15.0	14.0

New Debt/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Coupon	2.3%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
New Principal	62.6	71.2	79.0	51.2	21.9	6.5	12.0	28.2	31.7	79.1	82.3	92.3	102.6	113.6	125.3	137.8	151.2
Cumulative New Principal	62.6	133.8	212.8	264.0	285.9	292.4	280.4	252.2	220.5	141.4	59.1	33.2	135.8	249.3	374.7	512.5	663.7
Interest Payable	1.44	6.42	10.22	12.67	13.72	14.03	13.46	12.11	10.58	6.79	2.84	-1.60	-6.52	-11.97	-17.98	-24.60	-31.86
New Principal	62.6	133.8	212.8	264.0	285.9	292.4	280.4	252.2	220.5	141.4	59.1	33.2	135.8	249.3	374.7	512.5	663.7
Old Principal	359.0	356.0	349.3	342.7	336.0	326.3	316.6	306.9	297.2	283.1	268.9	254.8	240.6	226.5	212.3	198.2	184.0
Total Outstanding Debt	421.7	489.9	562.2	606.7	621.9	618.7	597.0	559.1	517.7	424.5	328.0	221.6	104.8	22.9	162.4	314.3	479.7

Debt Write Off Granted/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6%	7%	6%	6%	6%	6%	6%	6%	6%	7%	7%	8%	8%	11%	22%	1%	3%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Debt Converted to Equity/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6.37%	6.60%	6.37%	6.23%	6.17%	6.17%	6.16%	6.20%	6.24%	6.53%	6.94%	7.83%	10.91%	21.65%	1.25%	3.07%	3.73%
Dividend	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Water Industry Commissioner For Scotland
Asset Summary**

Cost Revaluation in the year		98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year					0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 years					0.53	0.78	0.97	0.93	0.90	0.80	0.82	0.90	0.92	0.90	0.80	0.40	0.40	0.40	0.40	0.40
4 years					0.05	0.06	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.04	0.03	0.03	0.03	0.03	0.03
5 years					0.04	0.08	0.11	0.15	0.18	0.18	0.17	0.16	0.14	0.15	0.12	0.12	0.09	0.08	0.08	0.08
6 years					0.05	0.09	0.12	0.16	0.19	0.22	0.21	0.20	0.18	0.16	0.12	0.09	0.08	0.08	0.08	0.08
7 years					0.05	0.09	0.12	0.16	0.19	0.22	0.21	0.20	0.18	0.16	0.12	0.09	0.08	0.08	0.08	0.08
10 years					0.38	0.49	0.58	0.68	0.71	0.80	0.96	1.06	1.10	1.14	1.03	0.95	0.90	0.80	0.73	0.67
15 years					0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01
20 years					1.37	1.71	1.99	2.38	2.69	2.98	3.25	3.51	3.66	3.81	3.96	4.11	4.27	4.43	4.59	4.74
25 years					0.27	0.55	0.79	1.11	1.37	1.62	1.85	2.23	2.08	2.38	2.53	2.66	2.84	3.00	3.16	3.32
40 years																				
60 years					0.14	0.23	0.31	0.42	0.50	0.59	0.66	0.74	0.79	0.84	0.89	0.94	0.99	1.04	1.09	1.14
80 years					0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
100 years					0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Infinite					2.33	2.61	2.85	3.15	3.41	3.71	4.01	4.30	4.59	4.88	5.17	5.46	5.75	6.04	6.33	6.62
Infrastructure Assets					3.17	2.97	2.73	2.25	2.59	2.56	2.36	1.83	1.70	1.40	1.09	1.09	1.09	1.09	1.09	1.09
Spend to Save - Capex					0.05	0.05	0.17	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other 3																				
Other 4																				
Other 5																				
Other 6																				
Other 7																				
Other 8																				
Other 9																				
Other 10																				
Total					13.13	14.57	15.80	17.34	18.37	19.35	19.93	20.56	20.80	21.06	21.20	21.77	22.39	22.99	23.63	24.29
Cost Revaluation (cumulative)					64.55	79.13	94.93	112.28	130.65	149.99	169.92	190.48	211.28	232.34	253.54	275.31	297.70	320.69	344.32	368.60
Disposals																				
1 year					3.37															
3 years					5.13	5.21	26.59	22.01	18.18	23.98	19.75	18.02	15.41	15.70	9.13	9.15	9.16	9.16	9.15	9.13
4 years					0.91	0.53	0.53	0.53	1.31	1.09	1.43	1.18	1.08	0.98	0.53	0.53	0.53	0.53	0.53	0.53
5 years					0.17	0.03	0.03	0.03	2.62	2.67	2.20	2.91	2.30	2.19	1.96	1.96	1.94	1.94	1.94	1.94
6 years					0.65	0.21	0.21	0.21	0.22	0.84	2.71	2.24	2.95	2.43	2.22	2.02	2.02	1.94	1.94	1.94
7 years																				
10 years																				
15 years																				
20 years																				
25 years																				
30 years																				
40 years																				
60 years																				
80 years																				
100 years																				
Infinite					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Infrastructure Assets					50.90	53.49	53.91	72.11	78.93	95.27	93.48	94.06	94.23	94.65	73.97	73.98	73.91	73.76	73.56	73.31
Spend to Save - Capex																				
Other 3																				
Other 4																				
Other 5																				
Other 6																				
Other 7																				
Other 8																				
Other 9																				
Other 10																				
Total					78.40	77.99	100.07	118.80	129.10	145.50	139.51	128.78	127.57	136.43	107.11	104.84	106.68	103.92	103.10	101.97

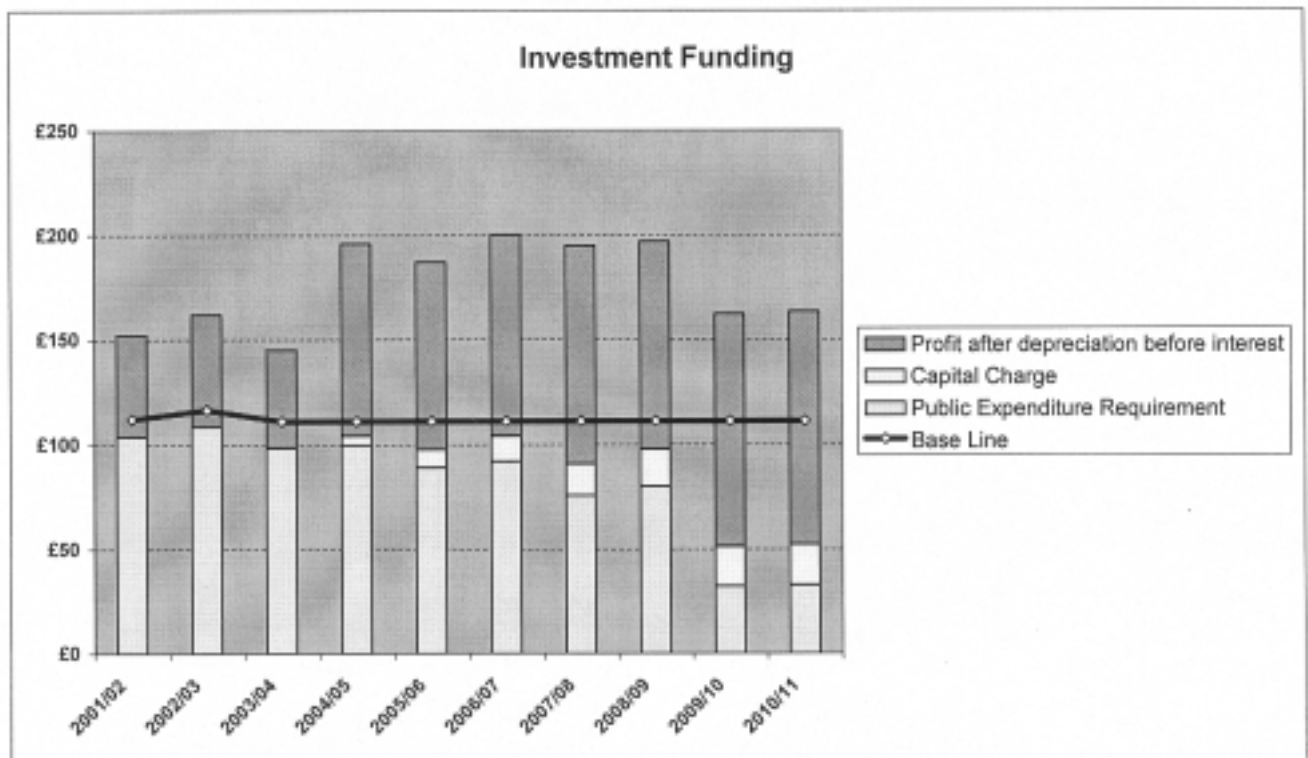
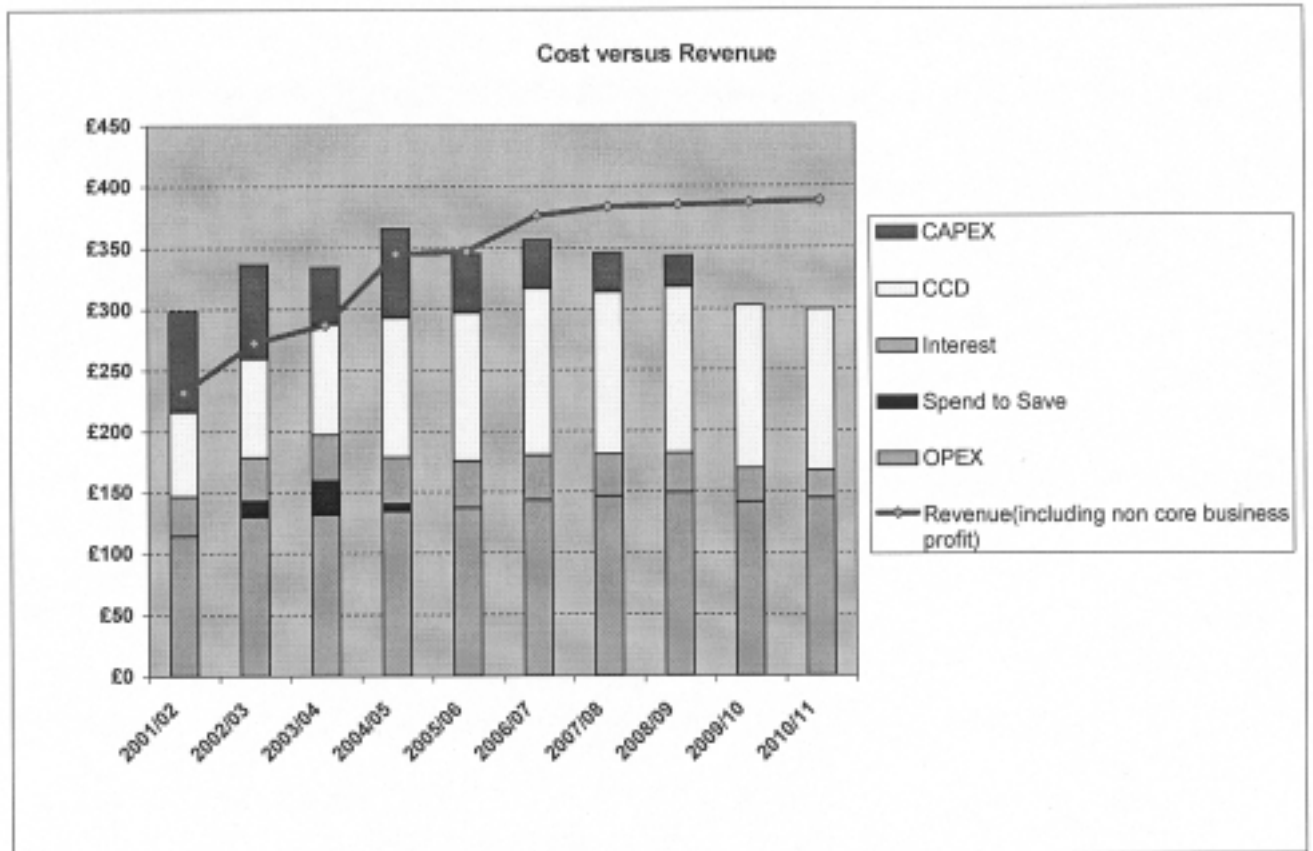
**Water Industry Commissioner For Scotland
Asset Summary**

	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Net Book Value																			
1 year		0.37	0.24		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 years		3.68	3.24	17.19	24.72	24.13	26.20	25.94	23.53	21.99	21.13	16.71	14.61	14.71	14.80	14.88	14.96	15.03	15.09
4 years	208.66	1.64	0.16	1.06	1.06	4.35	4.20	4.20	4.20	2.33	2.23	1.93	1.74	1.86	1.67	1.68	1.70	1.71	1.72
5 years	11.12	0.09	0.09	2.02	3.56	4.35	5.66	4.92	4.20	2.33	2.23	1.93	1.74	1.86	1.67	1.68	1.70	1.71	1.72
6 years	46.74	0.06	0.09	2.02	3.56	4.35	5.66	4.92	4.20	2.33	2.23	1.93	1.74	1.86	1.67	1.68	1.70	1.71	1.72
7 years	67.70	0.44	0.73	2.69	4.31	5.20	6.31	6.60	6.29	5.81	5.58	4.64	4.08	4.23	2.20	2.20	2.20	2.20	2.19
10 years		36.07	32.80	31.63	28.06	25.55	24.24	24.18	23.43	23.05	23.47	23.80	23.33	23.77	30.32	30.42	31.19	31.19	31.19
15 years		10.14	10.25	17.93	24.28	28.58	34.43	37.99	40.32	41.47	41.85	39.30	36.44	33.65	31.37	29.43	28.11	27.23	26.71
20 years		0.49	2.47	2.38	2.26	2.14	1.77	1.70	1.85	1.77	1.70	1.65	1.60	1.57	1.55	1.55	1.56	1.58	1.61
25 years		46.34	53.24	78.77	99.83	115.85	137.43	153.44	166.77	177.51	186.64	188.20	189.09	189.48	189.36	188.70	187.48	185.68	183.28
30 years				17.51	35.13	49.09	67.28	81.59	93.88	104.32	113.78	117.28	120.44	123.24	125.67	127.71	129.33	130.53	131.27
40 years				8.84	14.88	19.77	26.22	31.41	36.05	40.16	44.02	45.97	47.86	49.71	51.49	53.21	54.87	56.45	57.96
50 years		2.63	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
60 years		178.92	189.49	227.59	249.44	267.32	291.02	310.36	327.93	343.77	358.92	367.28	375.58	383.84	392.03	400.15	408.18	416.11	423.93
80 years		0.68	1.32	1.39	1.39	1.39	1.40	1.40	1.40	1.40	1.41	1.41	1.41	1.42	1.42	1.42	1.43	1.43	1.44
100 years		89.81	13.27	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.43	0.43	0.44	0.44	0.44	0.44	0.44	0.45	0.45
Infinite		68.29	82.83	101.63	127.76	142.76	163.16	183.16	203.16	223.16	243.16	263.16	283.16	303.16	323.16	343.16	363.16	383.16	403.16
Infrastructure Assets																			
Spend to Save - Capex																			
Other 3																			
Other 4																			
Other 5																			
Other 6																			
Other 7																			
Other 8																			
Other 9																			
Other 10																			
Total	402.59	452.93	531.94	666.33	757.13	822.46	907.70	969.27	1,023.37	1,070.69	1,112.30	1,118.83	1,127.30	1,148.63	1,170.24	1,191.60	1,212.76	1,233.37	1,253.26

Water Industry Commissioner For Scotland

Scenario Summary

"North of Scotland Water"



Water Industry Commissioner For Scotland Income and Expenditure Statement

Date: 11-10-2001 10:51

Scenario flag: E3R3B3G3P3

Model name: Public Funding A14

User: RK

Authority: North of Scotland Water Authority

	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Customer Revenue	137.8	153.9	207.2	232.0	260.8	290.6	307.9	315.7	340.5	347.0	353.6	360.4	367.3	374.4	381.5	388.9	396.4	404.0	411.8
Revenue Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Depreciation	14.60	17.20	20.4	26.5	36.8	45.1	51.1	52.0	60.9	48.3	52.3	50.2	48.6	47.0	47.2	47.7	48.1	48.9	49.7
Infrastructure Depreciation	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Depreciation	25.60	23.30	45.43	63.74	81.30	90.76	114.45	118.60	138.69	132.33	133.18	133.34	135.33	119.49	120.89	120.83	120.27	121.38	121.72
Manpower Costs (less capitalisation)	35.77	35.52	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56	40.56
Materials and Consumables	5.49	5.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Operational Costs	38.65	45.55	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34	48.34
Bad Debts	3.10	3.76	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Revenue Grant pre 1998	0.96	3.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Provision of Grants and Contributions	0.12	0.15	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenditure	82.08	86.63	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83	91.83
Transfer of Expenditure to Base Direct Opex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Level of service costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflation increment to level of service addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controllable Opex (inc. Inflation) - memo line	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deduct efficiency target	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controllable Opex (inc. Inflation) - memo line	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Direct Operating Sub-totals	82.08	86.63	91.83	90.92	82.46	83.01	84.51	85.09	91.09	92.73	84.51	85.10	86.80	88.53	90.30	92.11	93.95	95.84	97.76
PFI Charge	0.70	4.00	9.32	22.44	45.00	44.94	45.02	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Operational Costs	108.13	119.88	146.34	163.97	211.94	246.17	268.69	283.72	278.78	278.01	283.96	278.21	278.63	287.45	270.91	274.67	278.34	282.37	286.48
Net Profit from non-core business activities	29.87	34.22	60.84	48.38	48.77	68.45	69.38	67.06	60.95	66.06	68.32	65.36	60.66	107.09	118.92	114.99	118.41	121.91	123.48
Operating Profit	22.63	25.46	32.29	32.29	36.43	36.20	40.81	42.30	42.92	42.89	42.51	39.70	36.36	32.66	28.58	24.08	19.14	13.73	7.80
Exceptional Items/One-off costs	-	-	8.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Opex	0.89	0.75	1.17	-	9.28	19.89	5.79	-	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	-	-	-	-	1.15	1.18	1.21	1.24	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	7.84	9.92	25.60	16.08	5.23	11.74	14.00	16.00	17.93	25.19	25.51	45.86	54.29	74.42	82.24	90.31	99.07	106.08	117.68
Taxation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	7.84	9.92	25.60	16.08	5.23	11.74	14.00	16.00	17.93	25.19	25.51	45.86	54.29	74.42	82.24	90.31	99.07	106.08	117.68

Water Industry Commissioner For Scotland Balance Sheet

Authority: North of Scotland Water Authority

User: RK

Model name: Public Funding Alt4 Scenario flag: EABAB3CAPA

Date: 11-10-2001 10:51

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17		
Fixed Assets:																					
Tangible Assets	402	453	532	666	757	822	908	969	1,023	1,071	1,112	1,119	1,127	1,149	1,170	1,192	1,213	1,233	1,253	0	
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	403	453	532	666	757	823	908	969	1,023	1,071	1,112	1,119	1,127	1,149	1,170	1,192	1,213	1,233	1,253	0	
Current Assets:																					
Stocks	1.43	1.36	1.25	2.35	2.35	2.62	2.77	2.84	3.06	3.12	3.18	3.24	3.31	3.37	3.43	3.50	3.57	3.64	3.71	3.78	3.71
Debtors	25.57	31.67	32.05	44.09	49.55	55.21	58.51	59.97	64.69	65.92	67.19	68.47	69.79	71.13	72.49	73.89	75.31	76.76	78.23	79.70	78.23
Cash	5.60	2.02	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	32.60	35.05	36.45	46.44	51.90	57.83	61.28	62.81	67.75	69.05	70.37	71.72	73.09	74.50	75.93	77.39	78.87	80.39	81.94	83.46	81.94
Creditors (falling due within one year)	41.63	43.15	59.00	58.01	65.20	72.65	76.98	78.91	85.11	86.74	88.40	90.10	91.83	93.59	95.39	97.22	99.09	100.99	102.94	104.83	102.94
Net Current Liabilities	9.03	8.10	22.55	11.58	13.30	14.82	15.70	16.10	17.36	17.70	18.03	18.38	18.73	19.09	19.46	19.83	20.21	20.60	21.00	21.40	21.00
Total Assets Less Current Liabilities	393.47	444.85	509.42	654.80	743.88	807.69	892.05	953.22	1,006.05	1,053.05	1,094.32	1,100.50	1,108.62	1,129.58	1,150.83	1,171.82	1,192.60	1,212.81	1,232.31	1,252.81	1,232.31
Creditors (amounts falling due after more than one year)	1.63	4.38	0.00	4.64	5.22	5.81	6.16	6.31	6.81	6.94	7.07	7.21	7.35	7.49	7.63	7.78	7.93	8.08	8.24	8.39	8.24
Provisions for liabilities and charges	5.80	5.28	7.88	12.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	386.04	435.19	501.55	637.81	738.66	801.88	885.89	946.90	999.24	1,046.11	1,087.25	1,093.29	1,101.27	1,122.10	1,143.20	1,164.04	1,184.67	1,204.74	1,224.07	1,243.81	1,224.07
Capital and Reserves																					
Government and Other Loans	331.82	371.47	421.53	489.64	575.00	615.45	673.03	704.54	724.47	730.81	730.03	674.05	611.08	540.67	462.24	375.16	278.80	172.56	55.69	55.69	55.69
Capital Reserve	94.99	94.99	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79	84.79
Revaluation Reserve	0.00	0.00	0.00	52.06	62.32	73.34	85.78	99.29	113.76	129.09	145.20	161.57	178.23	195.04	212.33	229.94	247.87	266.09	284.62	284.62	284.62
Income and Expenditure Account	40.78	31.27	4.77	11.32	16.55	28.29	42.29	58.29	76.22	101.42	127.22	172.88	227.18	301.60	383.84	474.15	573.21	681.29	798.98	798.98	798.98
TOTAL	386.03	435.19	501.55	637.81	738.66	801.88	885.89	946.90	999.24	1,046.11	1,087.25	1,093.29	1,101.27	1,122.10	1,143.20	1,164.04	1,184.67	1,204.74	1,224.07	1,243.81	1,224.07

Water Industry Commissioner For Scotland Cashflow Statement

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	North of Scotland Water Authority												User: RK	Scenario flag: E99BAUC0P3	Date: 11-10-2001 10-51
			02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14			
Operating Profit	60.88	48.38	49.77	66.45	59.38	57.06	60.85	68.08	68.32	85.36	90.66	107.09	110.82	114.39	118.21	121.81	125.48
Add Back Depreciation	20.43	26.49	35.76	45.09	51.12	52.03	50.92	49.30	52.34	50.22	48.63	47.00	47.20	47.72	48.13	48.86	49.68
Amortisation of grants and contributions	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	25.00	43.25	45.54	45.66	63.33	69.77	85.58	83.53	83.81	83.68	83.79	72.87	72.89	72.82	72.67	72.50	72.23
Change in Working Capital	12.66	1.85	10.05	2.11	1.23	0.55	1.76	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55
Exceptional Items (Spend to Save OPEX)	8.71	-	9.26	19.69	5.79	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	110.03	116.27	111.75	141.64	169.27	179.41	199.11	201.37	204.94	219.74	223.57	227.46	231.42	235.45	239.54	243.71	247.95
Investment Sources and Uses of Funds	43.80	32.25	34.54	34.66	52.33	58.77	74.58	72.53	72.81	72.68	72.79	72.87	72.89	72.82	72.67	72.50	72.23
Infrastructure Renewal	80.96	119.82	123.82	102.29	134.92	111.09	101.54	92.30	88.84	51.38	51.45	51.51	51.52	51.47	51.37	51.24	51.05
Quality Related Investment	-	-	3.47	8.11	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Investment (Spend to Save CAPEX)	1.58	-	1.15	1.18	1.21	1.24	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	123.17	152.07	160.68	143.89	186.04	168.62	176.12	164.83	161.65	124.06	124.24	124.38	124.40	124.29	124.04	123.74	123.28
Financing Sources and Uses of Funds	26.84	32.29	36.43	38.20	40.81	42.30	42.92	42.89	42.51	39.70	36.36	32.66	28.58	24.09	19.14	13.73	7.80
Interest Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxation Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued/Repaid	10.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	12.43	3.02	6.67	6.67	6.67	9.69	9.69	9.69	9.69	14.15	14.15	14.15	14.15	14.15	14.15	14.15	14.15
New Debt Assumed	62.61	71.12	92.02	47.13	64.25	41.20	29.62	16.03	8.91	41.83	48.81	56.26	64.28	72.92	82.21	92.09	102.71

Water Industry Commissioner For Scotland Debt and Capital Summary

Authority: North of Scotland Water Authority

User: RK

Model name: Public Funding Alt4

Scenario flag: EMBASSCAP3

Date: 11-10-2001 10-

Existing Debt

Interest Rate/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	-	-	-	-	-	2.50	2.50	2.50	2.50	2.50	1.89	1.89	1.89	1.89	1.89	1.89	1.89
5.5%	-	-	1.67	1.67	1.67	-	-	-	-	-	1.66	1.66	1.66	1.66	1.66	1.66	1.66
6.5%	10.00	0.07	1.55	1.55	1.55	0.86	0.86	0.86	0.86	0.86	1.43	1.43	1.43	1.43	1.43	1.43	1.43
7.5%	1.52	1.26	1.01	1.01	1.01	1.03	1.03	1.03	1.03	1.03	0.37	0.37	0.37	0.37	0.37	0.37	0.37
8.5%	0.49	0.52	0.22	0.22	0.22	1.83	1.83	1.83	1.83	1.83	0.87	0.87	0.87	0.87	0.87	0.87	0.87
10.5%	0.29	1.11	0.49	0.49	0.49	2.68	2.68	2.68	2.68	2.68	0.55	0.55	0.55	0.55	0.55	0.55	0.55
11.5%	0.04	0.04	0.04	0.04	0.04	0.79	0.79	0.79	0.79	0.79	0.03	0.03	0.03	0.03	0.03	0.03	0.03
12.5%	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-	-	-	-	-	-	-
13.5%	0.00	0.00	0.03	0.03	0.03	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.5%	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Repayment		12.4	3.0	6.7	6.7	9.7	9.7	9.7	9.7	9.7	14.2	14.2	14.2	14.2	14.2	14.2	14.2
Outstanding Principal		359.0	356.0	349.3	342.7	336.0	326.3	316.6	306.9	297.2	283.1	268.9	254.8	240.6	226.5	212.3	198.2

Interest Payable On Existing Debt	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	2.24	2.24	2.24	2.24	2.24	2.24	2.13	2.01	1.90	1.79	1.70	1.70	1.62	1.53	1.45	1.36	1.28
5.5%	2.20	2.20	2.20	2.11	2.01	1.92	1.92	1.92	1.92	1.92	1.92	1.83	1.74	1.65	1.56	1.46	1.37
6.5%	3.15	2.50	2.50	2.39	2.28	2.17	2.12	2.06	2.01	1.95	1.86	1.86	1.76	1.67	1.58	1.49	1.39
7.5%	11.91	11.90	11.90	11.78	11.67	11.55	11.55	11.55	11.55	11.55	11.00	10.45	9.90	9.35	8.80	8.25	7.70
8.5%	1.51	1.38	1.27	1.18	1.10	1.01	0.92	0.84	0.75	0.66	0.63	0.63	0.60	0.57	0.54	0.50	0.47
9.5%	2.60	2.55	2.50	2.48	2.46	2.44	2.27	2.09	1.92	1.74	1.66	1.66	1.58	1.49	1.41	1.33	1.25
10.5%	2.64	2.60	2.49	2.44	2.39	2.33	2.05	1.77	1.49	1.21	1.15	1.10	1.04	0.98	0.92	0.86	0.81
11.5%	0.46	0.46	0.45	0.45	0.45	0.44	0.35	0.26	0.17	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.05
12.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.5%	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
14.5%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Interest (£000s)		26.7	25.9	25.6	25.1	24.1	23.3	22.5	21.7	20.9	19.9	18.9	17.9	16.9	15.9	15.0	14.0

New Debt/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Coupon	2.3%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
New Principal	62.6	71.1	92.0	47.1	64.2	41.2	29.6	16.0	8.9	41.8	48.8	56.3	64.3	72.9	82.2	92.1	102.7
Cumulative New Principal	62.6	133.7	225.8	272.9	337.1	378.3	408.0	424.0	432.9	391.1	342.2	286.0	221.7	148.8	66.6	25.5	128.2
Interest Payable	1.44	6.42	10.84	13.10	16.18	18.16	19.58	20.35	20.78	18.77	16.43	13.73	10.64	7.14	3.20	-1.22	-6.15
New Principal	62.6	133.7	225.8	272.9	337.1	378.3	408.0	424.0	432.9	391.1	342.2	286.0	221.7	148.8	66.6	25.5	128.2
Old Principal	359.0	356.0	349.3	342.7	336.0	326.3	316.6	306.9	297.2	283.1	268.9	254.8	240.6	226.5	212.3	198.2	184.0
Total Outstanding Debt		421.7	489.8	615.6	673.1	704.6	724.6	730.9	730.1	674.2	611.2	540.8	462.3	375.3	278.9	172.7	55.8

Debt Write Off Granted/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6%	7%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	7%	8%	14%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Debt Converted to Equity/ Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6.37%	6.60%	6.33%	6.21%	6.06%	6.00%	5.92%	5.87%	5.82%	5.89%	5.95%	6.04%	6.18%	6.42%	6.87%	7.95%	14.00%
Dividend	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

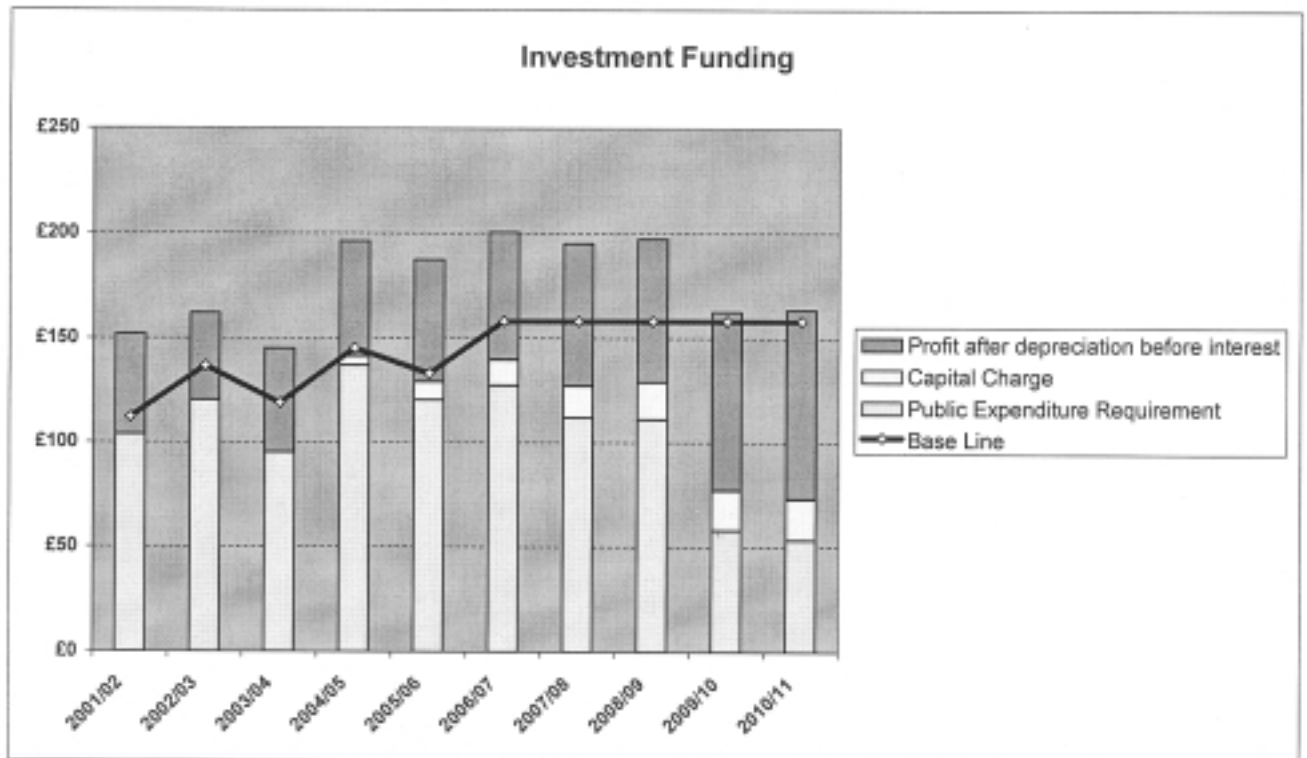
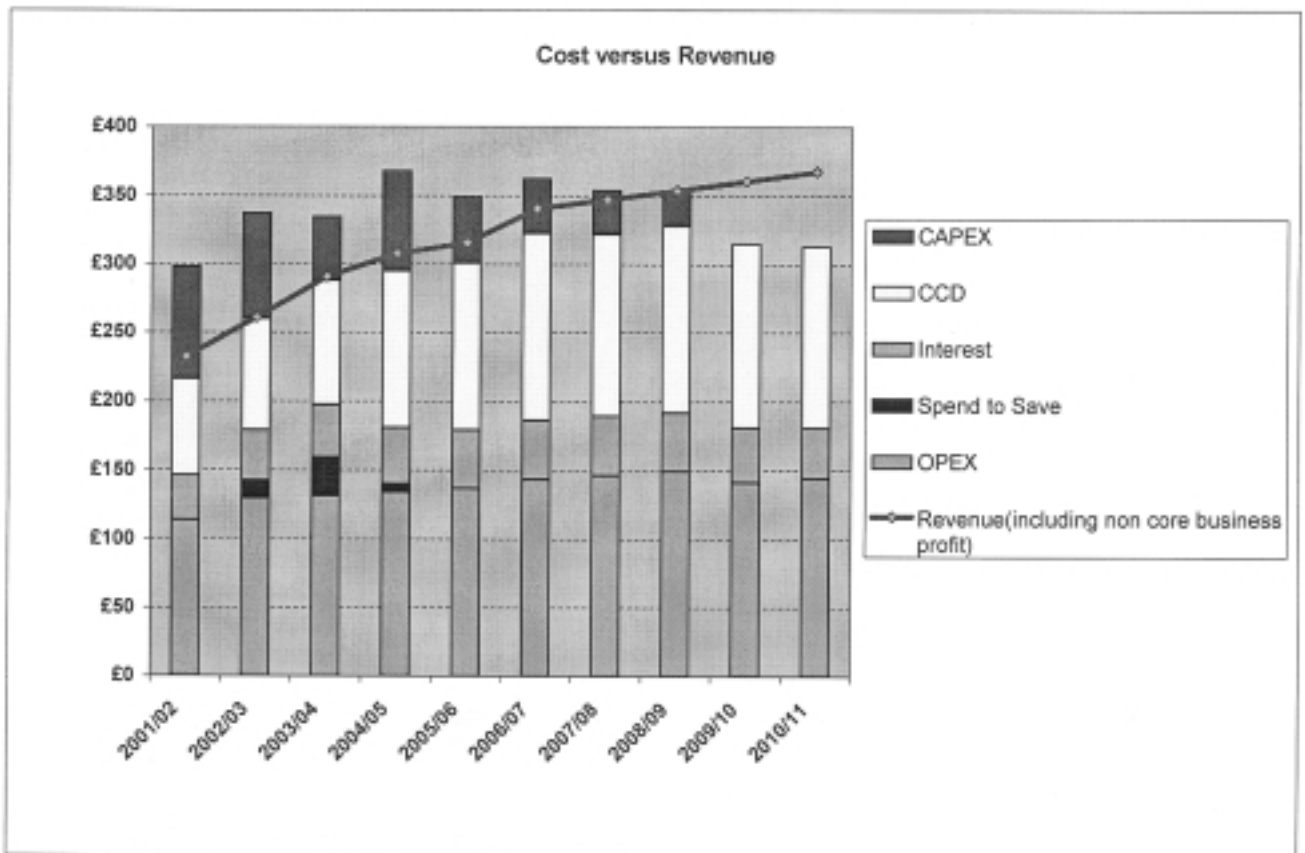
Water Industry Commissioner For Scotland
Asset Summary

Net Book Value	99/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	0.4	0.4	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 years	208.7	3.7	4.6	17.2	24.7	24.1	26.7	25.9	23.5	22.0	21.1	16.7	14.6	14.7	14.8	14.9	15.0	15.0	15.1
4 years	11.1	0.2	0.2	1.1	1.8	2.2	2.7	2.6	2.5	2.3	2.2	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7
5 years	46.7	0.1	0.1	2.0	3.6	4.3	5.1	4.9	4.7	4.3	4.0	3.2	2.7	2.4	2.2	2.2	2.2	2.2	2.2
6 years	67.7	0.4	0.7	2.7	4.3	5.2	6.3	6.6	6.3	5.9	5.6	4.7	4.0	3.6	3.3	3.2	3.2	3.2	3.2
7 years	-	36.1	32.8	31.6	28.1	25.5	24.2	24.2	25.4	28.1	28.5	28.9	29.3	29.8	30.2	30.7	31.1	31.6	32.1
10 years	-	10.1	10.3	17.9	24.3	26.6	34.4	38.0	40.3	41.5	41.8	39.3	36.4	33.6	31.4	29.4	28.1	27.2	26.7
15 years	-	0.5	2.5	2.4	2.3	2.1	2.0	1.9	1.8	1.8	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.6	1.6
20 years	-	46.3	53.3	78.8	99.8	115.8	137.4	153.4	166.8	177.5	186.8	189.2	189.1	189.5	189.4	186.7	187.5	185.7	183.3
25 years	-	-	-	17.5	35.1	49.1	67.4	81.6	93.9	104.3	113.8	117.3	120.4	123.2	125.7	127.7	129.3	130.5	131.3
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40 years	-	2.6	2.7	8.8	14.9	19.8	26.2	31.4	36.0	40.2	44.0	46.0	47.9	49.7	51.5	53.2	54.9	56.5	58.0
50 years	-	178.9	189.5	227.6	249.4	267.3	291.0	310.4	327.9	343.8	358.9	367.3	375.6	383.8	392.0	400.1	408.2	416.1	423.9
60 years	-	0.7	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80 years	-	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
100 years	-	89.8	131.6	157.9	176.6	192.8	213.5	231.3	248.2	264.1	279.8	290.7	301.9	313.2	324.7	336.4	348.2	360.2	372.3
Infinite	68.3	82.8	101.6	99.0	88.2	77.2	66.2	55.2	44.2	33.2	22.2	11.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Infrastructure Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Capex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	402.5	452.3	531.9	666.3	757.1	822.5	907.7	969.3	1,023.4	1,070.7	1,112.3	1,168.8	1,227.3	1,286.6	1,350.2	1,415.6	1,472.8	1,533.4	1,593.3

Water Industry Commissioner For Scotland

Scenario Summary

"North of Scotland Water"



Water Industry Commissioner For Scotland Income and Expenditure Statement

Authority: West of Scotland Water Authority

User: RK

Model name: VERSION3

Scenario flag: E3R3B3G3P3

Date: 11-10-2001 10:55

	Audited Assets 5989	Audited Liabilities 9090	Audited Assets 9091	W/S Budget 0.102	0203	0302	0403	0506	0607	0708	0809	0910	1011	1112	1213	1314	1415	1516	1617
Customer Revenue	285.7	278.7	314.2	352.1	388.7	434.8	506.0	519.5	628.6	539.9	642.2	544.3	546.9	557.5	568.3	578.4	590.6	602.1	613.9
Revenue Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Depreciation	27.69	28.83	31.5	41.8	53.7	69.7	78.2	82.8	77.2	74.6	72.2	73.7	75.3	77.7	79.3	80.8	82.1	83.4	85.3
Infrastructure Depreciation	27.6	27.6	34.5	50.3	42.8	45.4	52.4	57.9	55.8	56.0	56.2	56.3	56.4	56.5	56.6	56.7	56.8	56.9	57.0
Total Depreciation	55.28	56.43	65.98	92.08	96.48	115.08	130.54	140.3	133.0	130.6	128.4	128.0	127.7	127.2	126.9	126.5	126.1	125.7	125.3
Manpower Costs (less capitalisation)	57.04	58.73	65.98	88.96	66.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96	68.96
Materials and Consumables	30.35	25.31	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76
Other Operational Costs	49.55	64.14	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51
Revenue Grant p/a 1998	16.24	16.24	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28
Amortisation of Grants and Contributions	0.31	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Direct Opex	155.21	173.42	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51
Inflation increment to Base Direct Opex	-	8.73	13.26	17.91	22.67	27.55	32.55	37.65	42.85	48.32	53.84	59.50	65.30	71.24	77.34	83.54	89.84	96.24	102.74
Additional Level of service costs	-	0.74	1.47	2.21	2.94	3.67	4.41	5.14	5.87	6.60	7.34	8.07	8.80	9.53	10.26	11.00	11.73	12.46	13.20
Inflation increment to level of service addition	-	0.04	0.11	0.23	0.39	0.60	0.80	1.03	1.29	1.53	1.82	2.15	2.52	2.92	3.37	3.79	4.24	4.72	5.22
Controllable Opex (inc. Inflation) - memo line	176.82	181.24	190.42	199.42	208.96	217.78	226.96	236.44	246.24	256.36	266.80	277.56	288.64	299.96	311.52	323.32	335.36	347.64	360.16
Control Costs (inc. Inflation) - memo line	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54
Control Costs (inc. Inflation) - memo line	168.28	172.70	181.88	190.88	199.42	208.24	217.42	226.90	236.70	246.82	257.24	267.96	278.96	290.24	301.76	313.52	325.52	337.76	350.24
Direct Operating sub-totals	155.21	173.42	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51
PFI Charge	-	-	31.79	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54
Inflation increment to PFI Charge	-	1.65	2.92	4.28	5.73	7.11	8.54	10.03	11.57	13.16	14.80	16.49	18.24	20.04	21.88	23.76	25.68	27.64	29.64
Operating Costs	210.19	228.54	238.49	244.79	251.24	257.92	264.85	272.04	279.48	287.16	295.08	303.24	311.64	320.28	329.16	338.28	347.64	357.24	367.04
Net profit from non-core business activities	55.49	49.14	75.76	70.86	111.32	138.08	161.48	181.07	206.97	239.24	277.96	322.44	373.68	431.92	497.28	569.76	649.44	736.32	830.56
Interest Charges	51.10	48.94	55.47	59.07	61.99	62.84	61.55	58.77	51.97	44.49	36.02	28.70	21.19	13.04	4.22	5.30	15.57	26.63	38.55
Exceptional Items (One-off costs)	-	-	12.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Share of Results Opex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	1.20	1.04	1.10	-	1.53	1.57	1.65	1.65	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	8.59	1.24	10.92	12.79	32.54	37.97	90.88	104.78	123.68	140.88	150.72	155.49	158.07	166.43	198.84	211.58	225.71	240.71	256.14
Taxation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	8.59	1.24	10.92	12.79	32.54	37.97	90.88	104.78	123.68	140.88	150.72	155.49	158.07	166.43	198.84	211.58	225.71	240.71	256.14

Water Industry Commissioner For Scotland Balance Sheet

Authority: West of Scotland Water Authority

User: RK

Model name: VERSION3

Scenario flag: ERSB31030393

Date: 11-10-2001 10:55

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	
Fixed Assets:																				
Tangible Assets	660	773	884	1,035	1,125	1,220	1,316	1,408	1,435	1,466	1,501	1,535	1,568	1,617	1,666	1,713	1,760	1,806	1,850	0
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	660	773	884	1,035	1,125	1,220	1,316	1,408	1,435	1,466	1,501	1,535	1,568	1,617	1,666	1,713	1,760	1,806	1,850	0
Current Assets:																				
Stocks	0.92	0.89	0.98	3.50	3.50	3.91	4.55	4.68	4.77	4.86	4.88	4.90	4.92	5.02	5.11	5.21	5.32	5.42	5.52	0
Debtors	54.35	48.87	57.28	66.90	73.86	82.61	96.13	98.71	100.62	102.57	103.02	103.46	103.91	105.93	107.98	110.08	112.22	114.41	116.63	0
Cash	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Total Current Assets	55.28	49.77	58.27	70.40	77.36	86.52	100.68	103.39	105.39	107.43	107.89	108.36	108.83	110.94	113.10	115.30	117.54	119.82	122.16	0
Creditors (falling due within one year)	75.06	83.08	98.57	88.03	97.18	108.69	126.49	129.89	132.40	134.96	135.55	136.13	136.72	139.38	142.08	144.84	147.66	150.53	153.46	0
Net Current Liabilities	19.78	33.31	40.29	17.63	19.82	22.17	25.80	26.50	27.01	27.53	27.65	27.77	27.89	28.43	28.98	29.55	30.12	30.71	31.31	0
Total Assets Less Current Liabilities	640.06	739.67	843.81	1,017.34	1,105.09	1,198.05	1,290.69	1,381.45	1,408.26	1,438.77	1,473.18	1,506.95	1,540.04	1,588.68	1,636.69	1,683.77	1,730.01	1,775.37	1,819.15	0
Creditors (amounts falling due after more than one year)	0.60	0.29	0.00	7.04	7.77	8.70	10.12	10.39	10.59	10.80	10.84	10.89	10.94	11.15	11.37	11.59	11.81	12.04	12.28	0
Provisions for liabilities and charges	11.89	16.07	24.18	22.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
NET ASSETS	627.57	723.31	819.64	988.09	1,097.31	1,189.36	1,280.57	1,371.06	1,397.66	1,427.98	1,462.33	1,496.06	1,529.10	1,577.53	1,625.32	1,672.18	1,718.20	1,763.33	1,806.87	0
Capital and Reserves																				
Government and Other Loans	620.36	714.76	800.17	884.33	945.79	983.75	966.41	932.64	815.40	683.96	545.94	401.80	253.60	91.98	83.38	273.42	479.12	701.39	941.33	0
Capital Reserve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Revaluation Reserve	0.00	0.00	0.00	71.51	86.72	102.93	120.81	140.30	160.46	181.34	202.99	225.41	248.58	272.21	296.82	322.14	348.15	374.84	402.19	0
Income and Expenditure Account	7.21	8.55	19.47	32.26	64.80	102.67	193.35	298.12	421.80	562.67	713.39	868.85	1,026.92	1,213.35	1,411.89	1,623.47	1,849.17	2,089.88	2,346.02	0
TOTAL	627.57	723.31	819.64	988.09	1,097.31	1,189.36	1,280.57	1,371.06	1,397.66	1,427.98	1,462.33	1,496.06	1,529.10	1,577.53	1,625.32	1,672.18	1,718.20	1,763.33	1,806.87	0

**Water Industry Commissioner For Scotland
Cashflow Statement**

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	West of Scotland Water Authority												Date: 11-10-2001 10:55		
			02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14		14/15	15/16
Operating Profit	75.76	70.86	111.32	138.06	162.07	161.88	175.65	185.37	186.74	184.16	179.26	199.46	202.76	206.28	210.14	214.07	217.60
Add Back Depreciation	31.48	41.82	53.66	69.70	78.15	82.79	77.20	74.55	72.19	73.74	75.33	77.66	79.28	80.80	82.11	83.42	85.27
Amortisation of grants and contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	34.50	60.25	42.82	45.39	82.39	87.91	85.76	86.00	86.23	86.34	86.44	88.81	68.82	68.75	68.61	68.45	68.20
Change in Working Capital	14.80	17.60	19.27	3.27	5.05	0.97	0.71	0.73	0.17	0.17	0.17	0.75	0.77	0.78	0.80	0.82	0.83
Exceptional items (Spend to Save OPEX)	12.47	-	18.32	38.92	11.45	0.97	0.71	0.73	0.17	0.17	0.17	0.75	0.77	0.78	0.80	0.82	0.83
Sources of Funds From Operations	144.06	155.34	170.22	217.49	316.21	333.55	339.33	346.65	345.32	344.41	341.21	346.68	351.63	356.63	361.67	366.76	371.89
Investment Sources and Uses of Funds																	
Infrastructure Renewal	62.57	42.54	25.11	27.67	64.67	70.20	68.05	68.29	68.51	68.63	68.73	68.81	68.82	68.75	68.61	68.45	68.20
Quality Related Investment	114.94	138.89	139.24	150.49	174.26	172.46	102.07	102.43	102.77	102.94	103.09	103.21	103.23	103.13	102.92	102.68	102.30
Other Investment (Spend to Save CAPEX)	-	-	6.87	16.03	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	1.50	-	1.53	1.57	1.61	1.65	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	176.01	181.43	169.68	192.62	237.32	241.01	170.12	170.72	171.28	171.57	171.82	172.02	172.04	171.88	171.53	171.13	170.49
Financing Sources and Uses of Funds																	
Interest paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxation paid	53.47	58.07	61.99	62.84	61.55	58.77	51.97	44.49	36.02	28.70	21.19	13.04	4.22	5.30	15.57	26.63	38.55
Dividends paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	17.35	3.42	25.85	25.85	36.71	36.71	36.72	36.72	22.52	22.52	22.52	22.52	22.52	22.52	22.52	22.52	22.52
New Debt Assumed	-	87.58	87.30	63.81	19.37	2.94	80.52	94.72	115.50	121.62	125.68	139.11	152.84	167.52	183.18	199.74	217.43

Authority: West of Scotland Water Authority

Model name: VERSION3

User: RK

Scenario flag: EDRBUDG3P3

Model name: VERSION3

User: RK

Scenario flag: EDRBUDG3P3

Water Industry Commissioner For Scotland Debt and Capital Summary

Existing Debt Authority: West of Scotland Water Authority Model name: VERSION3 User: RK Scenario flag: E3889A9C8PS Date: 11-10-2001 10.

Interest Rate/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	-	-	-	-	8.75	8.75	8.75	8.75	6.14	6.14	6.14	6.14	6.14	6.14	6.14	6.14	6.14
5.5%	15.00	-	-	-	1.25	1.25	1.25	1.25	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37
6.5%	-	1.02	0.76	0.76	-	0.00	0.00	0.00	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52
7.5%	-	0.62	6.98	6.98	6.13	6.13	6.13	6.13	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
8.5%	-	1.23	10.48	10.48	3.94	3.94	3.94	3.94	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
9.5%	0.91	0.39	5.16	5.16	5.65	5.65	5.65	5.65	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
10.5%	1.38	0.16	2.32	2.32	3.65	3.65	3.65	3.65	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11.5%	0.04	-	0.14	0.14	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
12.5%	-	-	0.00	0.00	0.18	0.18	0.18	0.18	-	-	-	-	-	-	-	-	-
13.5%	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Repayment	17.3	3.4	25.8	25.8	36.7	36.7	36.7	36.7	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Outstanding Principal	697.4	694.0	668.1	642.3	605.6	568.9	532.2	495.4	472.9	450.4	427.9	405.4	382.8	360.3	337.8	315.3	292.8

Interest Payable On Existing Debt	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
4.5%	7.65	7.65	7.65	7.65	7.65	7.65	7.65	6.47	6.07	5.80	5.52	5.25	4.97	4.69	4.42	4.14	3.87
5.5%	3.97	3.14	3.14	3.14	3.14	3.07	3.00	2.93	2.87	2.74	2.60	2.47	2.34	2.21	2.08	1.95	1.82
6.5%	5.20	5.13	5.08	5.08	5.03	4.95	4.83	4.71	4.57	4.40	4.23	4.07	3.91	3.74	3.56	3.39	3.20
7.5%	16.66	16.66	16.61	16.09	15.56	14.95	14.34	13.74	13.13	12.53	11.93	11.34	10.74	10.14	9.55	8.95	8.35
8.5%	4.23	4.23	4.13	4.08	3.94	3.81	3.67	3.54	3.40	3.26	3.12	2.98	2.84	2.70	2.56	2.42	2.28
9.5%	5.43	5.34	5.31	4.82	4.33	3.79	3.25	2.71	2.18	1.68	1.18	0.67	0.17	0.08	0.02	0.00	0.00
10.5%	4.95	4.80	4.79	4.54	4.30	4.06	3.82	3.58	3.34	3.10	2.86	2.62	2.38	2.14	1.90	1.66	1.42
11.5%	1.82	1.81	1.81	1.80	1.78	1.76	1.74	1.72	1.70	1.68	1.66	1.64	1.62	1.60	1.58	1.56	1.54
12.5%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.5%	0.10	0.10	0.10	0.10	0.10	0.07	0.05	0.02	-	-	-	-	-	-	-	-	-
14.5%	50.0	48.9	48.7	46.4	44.2	41.3	38.4	35.4	32.5	31.0	29.6	28.1	26.6	25.1	23.6	22.2	20.7

New Debt/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Coupon	2.3%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
New Principal	102.8	87.6	87.3	63.8	19.4	2.9	80.5	94.7	115.5	121.6	129.7	139.1	152.8	167.5	183.2	199.7	217.4
Cumulative New Principal	102.8	190.3	277.6	341.5	360.8	363.8	283.2	188.5	73.0	-	-	-	-	-	-	-	-
Interest Payable	2.36	9.14	13.33	16.39	17.32	17.46	13.60	9.05	3.51	-	-	-	-	-	-	-	-
New Principal	102.8	190.3	277.6	341.5	360.8	363.8	283.2	188.5	73.0	-	-	-	-	-	-	-	-
Old Principal	697.4	694.0	668.1	642.3	605.6	568.9	532.2	495.4	472.9	450.4	427.9	405.4	382.8	360.3	337.8	315.3	292.8
Total Outstanding Debt	800.2	884.3	945.8	983.8	966.4	932.6	815.4	684.0	545.9	401.8	253.6	92.0	-	-	-	-	-

Debt Write Off Granted/Year	00/01	01/02	02/03	03/04	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05	04/05
Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Written Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	7%	7%	7%	6%	6%	6%	6%	7%	7%	7%	8%	14%	-5%	2%	3%	4%	4%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Debt Converted to Equity/Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Principal Converted to Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted Average Interest Rate	6.68%	6.57%	6.55%	6.39%	6.37%	6.30%	6.37%	6.51%	6.60%	7.14%	8.36%	14.18%	-5.07%	1.94%	3.25%	3.80%	4.09%
Dividend	0.00%	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Cost of Write Off	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Water Industry Commissioner For Scotland
Asset Summary**

Cost Revaluation in the year	38/39																		16/17
	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16		
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3 years	-	-	0.6	0.9	1.2	1.2	1.3	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
4 years	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5 years	-	-	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
6 years	-	-	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 years	-	-	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.4	1.4	1.3	1.2	1.2	1.2	
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20 years	-	-	2.1	2.5	2.9	3.4	3.8	4.1	4.4	4.7	5.0	5.2	5.5	5.8	6.1	6.4	6.7	7.0	
25 years	-	-	4.3	4.6	4.8	5.1	5.4	5.6	5.7	5.9	6.0	6.1	6.3	6.4	6.6	6.7	6.9	7.0	
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40 years	-	-	0.2	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	
60 years	-	-	6.9	7.2	7.6	8.1	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9	
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Infrastructure Assets	-	-	0.3	0.6	0.9	1.3	1.6	1.9	2.1	2.3	2.6	2.8	3.1	3.3	3.6	3.8	4.1	4.4	
Spent to Save - Capex	-	-	4.3	3.7	3.4	3.6	3.4	3.0	2.6	2.2	1.8	1.4	1.0	1.0	1.0	1.0	1.0	1.0	
Other 3	-	-	-	0.1	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	-	-	20.0	21.3	23.2	25.4	27.0	27.3	27.8	28.3	29.0	29.6	30.1	31.2	32.2	33.3	34.3	35.4	
Cost Revaluation (Cumulative)	-	-	90.0	111.4	134.6	159.9	187.0	214.3	242.1	270.3	299.3	328.9	359.0	390.2	422.3	455.7	490.0	525.4	
Deprecials	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3 years	-	-	5.9	5.9	30.3	24.3	24.3	26.3	30.4	30.1	17.8	17.9	17.9	18.0	18.0	18.0	18.0	18.0	
4 years	-	-	0.3	0.6	0.8	0.9	1.6	0.9	1.0	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
5 years	-	-	-	0.5	0.5	0.5	3.5	3.5	3.0	3.2	3.8	3.7	2.7	2.2	2.2	2.2	2.2	2.2	
6 years	-	-	0.1	0.1	1.7	1.7	1.7	4.3	4.3	2.6	2.8	3.2	3.2	1.9	1.9	1.9	1.9	1.9	
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10 years	-	-	0.0	5.8	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	17.9	11.3	12.7	14.2	14.0	8.3	
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20 years	-	-	0.3	5.7	5.8	5.9	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	
25 years	-	-	0.1	10.9	11.0	11.2	11.4	11.5	11.7	11.9	12.1	12.2	12.4	12.6	12.8	13.0	13.2	13.4	
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40 years	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
60 years	-	-	0.7	7.3	7.4	7.5	7.7	7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.6	8.8	8.9	9.0	
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Infrastructure Assets	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spent to Save - Capex	-	-	6.77	50.4	51.3	91.3	97.3	95.5	96.1	96.1	96.7	97.3	97.8	98.8	99.8	99.6	99.5	99.2	
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	1.4	1.9	1.4	106.4	89.6	117.4	158.0	178.1	166.3	165.8	155.3	156.4	167.2	131.8	132.2	135.5	135.7	130.2	

**Water Industry Commissioner For Scotland
Asset Summary**

Depreciation Revaluation		98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Capex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation Revaluation (cumulative)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation (eliminated on disposal)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure Assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spend to Save - Capex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

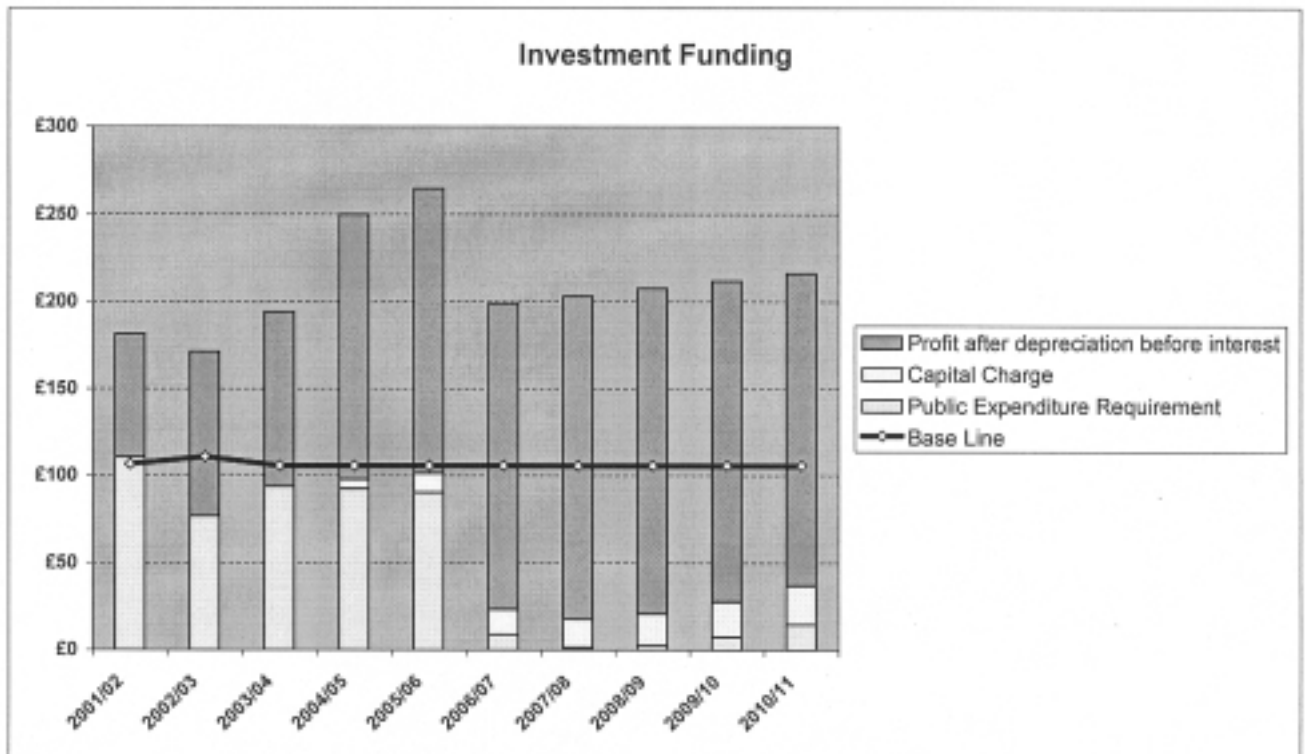
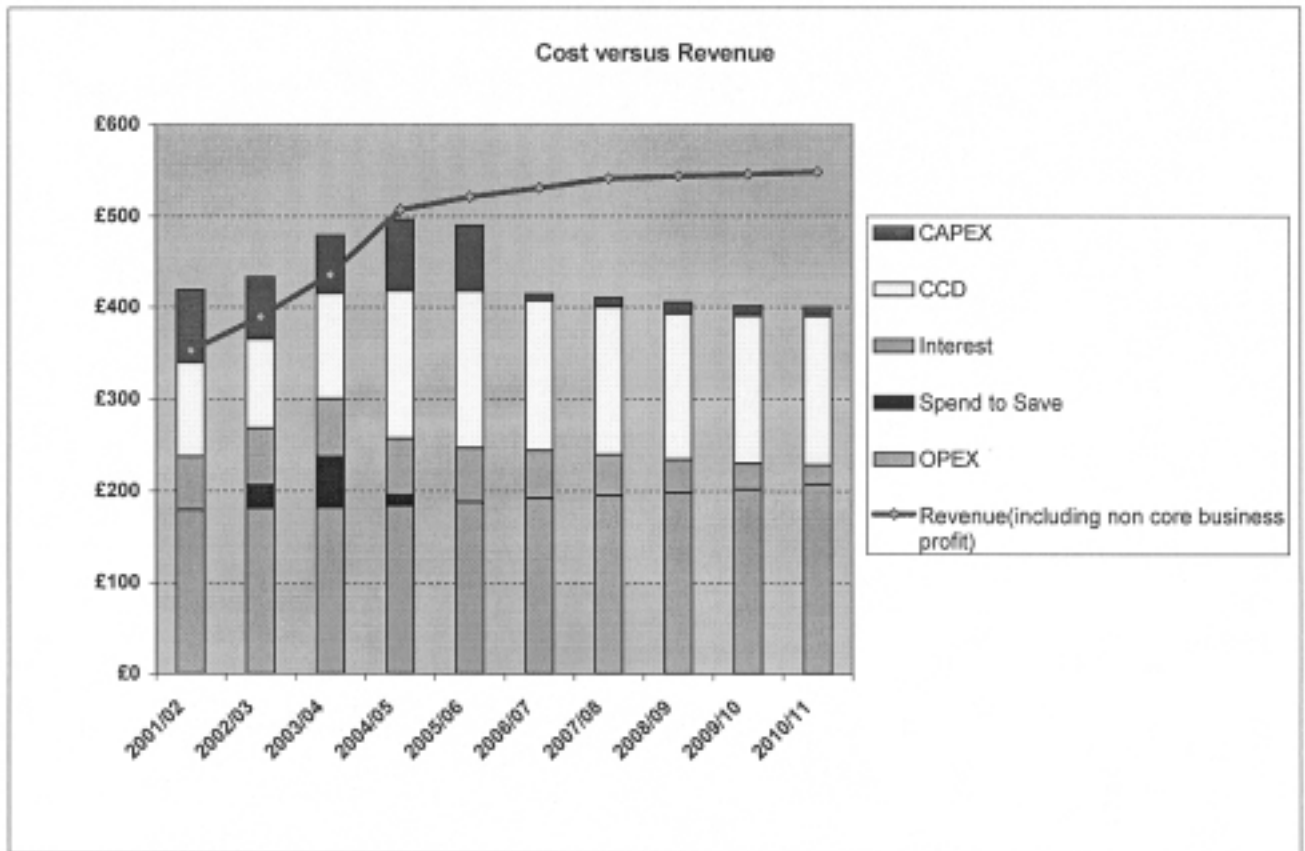
**Water Industry Commissioner For Scotland
Asset Summary**

Net Book Value	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	6.9	6.8	6.3	20.3	28.0	30.9	34.3	35.3	27.6	23.7	23.8	23.9	24.1	24.2	24.3	24.4	24.5	24.5	24.6
3 years	2.1	2.1	1.4	1.8	2.1	2.4	2.7	2.8	2.6	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.5
4 years	0.7	1.5	1.7	3.8	5.2	6.4	7.5	7.9	7.0	6.2	5.7	5.4	5.4	5.4	5.5	5.5	5.5	5.5	5.5
5 years	6.2	6.6	5.1	6.7	7.7	8.7	10.0	10.9	9.9	9.3	8.8	8.4	8.3	8.4	8.4	8.5	8.5	8.6	8.6
6 years	25.7	35.5	38.5	46.5	51.4	56.6	62.9	68.3	68.6	68.6	68.5	68.1	67.5	66.3	65.3	64.6	64.5	65.0	65.4
10 years	68.0	71.8	76.3	105.7	128.9	153.4	181.4	207.9	219.5	230.4	240.6	250.0	258.6	266.3	273.2	279.1	284.1	288.1	291.0
15 years	147.6	203.6	252.0	281.5	295.3	310.2	328.3	345.5	351.6	357.4	363.0	368.3	373.3	378.0	382.4	386.4	390.2	393.5	396.5
20 years	2.7	3.9	7.1	14.5	21.5	29.0	37.6	46.1	50.8	55.4	60.0	64.5	68.9	73.2	77.4	81.6	85.6	89.4	93.2
30 years	309.6	312.3	338.4	386.5	410.8	437.0	467.3	497.3	514.8	522.1	549.4	566.6	583.8	600.9	618.0	634.9	651.7	668.3	684.8
40 years																			
60 years																			
80 years																			
100 years																			
Infinite	8.9	9.7	9.3	8.3	27.2	48.0	72.2	96.6	111.8	127.3	143.1	159.1	175.4	192.0	208.8	225.9	243.1	260.6	278.4
Infrastructure Assets	104.3	138.5	166.6	194.4	142.0	124.3	106.6	88.8	71.1	53.4	35.7	18.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Spent to Save - Cplx					4.6	13.2	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 1																			
Other 2																			
Other 3																			
Other 4																			
Other 5																			
Other 6																			
Other 7																			
Other 8																			
Other 9																			
Other 10																			
Total	659.8	772.9	884.1	1,034.9	1,124.9	1,220.2	1,316.4	1,407.9	1,435.2	1,466.3	1,500.8	1,534.7	1,567.9	1,617.1	1,665.5	1,713.3	1,760.1	1,806.0	1,850.4

Water Industry Commissioner For Scotland

Scenario Summary

"West of Scotland Water"



Water Industry Commissioner For Scotland Income and Expenditure Statement

Authority: West of Scotland Water Authority

User: RK

Model name: Public Funding A1B

Scenario flag: E3R3B313G3P3

Date: 11-10-2001 11:16

	Audited PFI 9098	Audited PFI 9099	Audited PFI 9100	Audited PFI 9101	WA Budget 9102	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Customer Revenue	285.7	314.2	382.1	434.8	496.7	507.7	577.8	527.8	537.8	548.2	548.9	589.7	603.8	615.3	615.3	615.3	615.3	615.3	615.3	615.3
Revenue Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Depreciation	27.69	31.5	41.8	67	78.2	82.6	77.2	74.6	72.2	73.7	75.3	77.7	80.8	82.1	83.4	83.4	83.4	83.4	83.4	83.4
Infrastructure Depreciation	27.68	27.9	34.5	42.8	45.4	46.2	45.4	46.0	46.2	46.3	46.4	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8
Total Depreciation	55.29	59.4	76.3	115.08	123.6	128.8	122.6	120.6	118.4	119.6	121.7	124.6	127.6	129.2	130.2	130.2	130.2	130.2	130.2	130.2
Manpower Costs (less capitalisation)	57.04	65.73	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96	66.96
Materials and Consumables	30.35	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76	19.76
Other Operational Costs	48.55	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51	63.51
Revenue Grant pre 1996	18.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28	22.28
Amortisation of Grants and Contributions	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Direct Opex	155.21	173.42	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51
Inflation Increment to Base Direct Opex	-	-	4.31	13.26	17.91	22.87	27.55	32.55	37.65	42.93	48.32	53.84	59.50	65.30	71.24	77.34	83.58	89.98	96.54	103.27
Additional Level of service costs	-	-	-	0.74	2.21	6.00	10.00	14.13	18.42	22.87	27.46	32.19	37.06	42.06	47.19	52.46	57.86	63.39	69.05	74.84
Inflation Increment to level of service addition	-	-	-	0.04	0.11	0.39	0.80	1.13	1.53	1.99	2.52	3.12	3.79	4.54	5.37	6.28	7.27	8.34	9.48	10.70
Contributable Opex (inc. Inflation) - memo line	-	-	176.82	187.24	199.42	203.59	208.08	212.94	218.11	223.59	229.28	235.19	241.32	247.67	254.24	261.03	268.05	275.29	282.76	290.46
Contributable Opex (inc. Inflation) - memo line	-	-	176.82	187.24	199.42	203.59	208.08	212.94	218.11	223.59	229.28	235.19	241.32	247.67	254.24	261.03	268.05	275.29	282.76	290.46
Direct operating sub-totals	155.21	173.42	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51	172.51
PFI Charge	-	-	10.75	32.78	31.78	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54	32.54
Inflation Increment to PFI Charge	-	-	0.27	2.52	3.30	4.26	5.20	6.14	7.11	8.10	9.11	10.15	11.22	12.32	13.44	14.59	15.76	16.95	18.16	19.41
Operating Costs	210.19	229.54	231.39	237.33	244.79	252.88	261.55	270.79	280.59	290.94	301.84	313.29	325.29	337.83	350.92	364.57	378.79	393.57	408.92	424.84
Net profit from non-core business activities	55.49	48.14	75.76	138.06	152.81	150.06	163.92	173.10	182.36	192.88	199.23	211.66	219.19	227.83	236.57	245.41	254.34	263.36	272.47	281.67
Interest Charges	51.10	48.94	61.99	62.84	62.05	59.90	55.78	47.00	36.84	31.45	23.45	14.79	5.44	4.66	15.55	27.26	39.90	52.54	65.18	77.82
Expenditure on One-off costs	-	12.47	-	38.92	11.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenditure on Opex	1.20	1.04	1.53	1.57	1.61	1.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asset Disposals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Profit	5.59	1.24	10.92	37.87	80.92	81.83	108.88	126.10	143.52	158.41	167.78	188.87	209.76	223.61	238.60	254.51	270.91	287.81	305.21	323.10
Taxation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	5.59	1.24	10.92	37.87	80.92	81.83	108.88	126.10	143.52	158.41	167.78	188.87	209.76	223.61	238.60	254.51	270.91	287.81	305.21	323.10

Water Industry Commissioner For Scotland Balance Sheet

Authority: West of Scotland Water Authority

User: RK

Model name: Public Funding A113 Scenario flag: ERA8A13CAPA

Date: 11-10-2001 11-17

Balance Sheet	Audited Actuals 98/99	Audited Actuals 99/00	Audited Actuals 00/01	Audited Actuals 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Fixed Assets:																			
Tangible Assets	660	773	884	1,035	1,125	1,220	1,316	1,408	1,435	1,466	1,501	1,535	1,568	1,617	1,666	1,713	1,760	1,806	1,850
Investments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Assets	660	773	884	1,035	1,125	1,220	1,316	1,408	1,435	1,466	1,501	1,535	1,568	1,617	1,666	1,713	1,760	1,806	1,850
Current Assets:																			
Stocks	0.92	0.89	0.98	3.50	3.50	3.91	4.47	4.57	4.66	4.75	4.84	4.93	5.03	5.13	5.23	5.33	5.43	5.54	5.65
Debtors	54.35	48.87	57.28	66.90	73.86	82.61	94.37	96.47	98.34	100.24	102.18	104.16	106.18	108.24	110.34	112.49	114.68	116.91	119.18
Cash	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Current Assets	55.28	49.77	58.27	70.40	77.36	86.52	98.84	101.04	103.00	104.99	107.02	109.10	111.21	113.37	115.57	117.82	120.11	122.44	124.83
Creditors (falling due within one year)	75.06	83.08	98.57	88.03	97.18	108.69	124.17	126.94	129.39	131.90	134.45	137.06	139.71	142.43	145.19	148.01	150.89	153.82	156.82
Net Current Liabilities	19.78	33.31	40.29	17.63	19.82	22.17	25.33	25.90	26.40	26.91	27.43	27.96	28.50	29.05	29.62	30.19	30.78	31.38	31.99
Total Assets Less Current Liabilities	640.06	739.67	843.81	1,017.34	1,105.09	1,198.05	1,291.17	1,382.05	1,408.87	1,439.40	1,473.40	1,506.76	1,539.43	1,588.06	1,636.06	1,683.12	1,729.36	1,774.70	1,818.47
Creditors (amounts falling due after more than one year)	0.60	0.29	0.00	7.04	7.77	8.70	9.93	10.15	10.35	10.55	10.76	10.96	11.18	11.39	11.62	11.84	12.07	12.31	12.55
Provisions for liabilities and charges	11.89	16.07	24.18	22.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET ASSETS	627.57	723.31	819.64	988.09	1,097.31	1,189.36	1,281.23	1,371.90	1,398.52	1,428.85	1,462.64	1,495.80	1,528.25	1,576.67	1,624.44	1,671.28	1,717.28	1,762.40	1,805.92
Capital and Reserves																			
Government and Other Loans	620.36	714.76	800.17	884.33	945.79	983.75	976.82	956.16	852.77	736.12	604.74	459.07	300.57	128.48	58.11	260.20	478.82	714.90	969.63
Capital Reserve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revaluation Reserve	0.00	0.00	0.00	71.51	86.72	102.93	120.81	140.30	160.46	181.34	202.99	225.41	248.58	272.21	296.82	322.14	348.15	374.84	402.19
Income and Expenditure Account	7.21	8.55	19.47	32.26	64.80	102.67	183.60	275.43	385.29	511.39	654.91	811.32	979.10	1,175.98	1,385.73	1,609.35	1,847.95	2,102.46	2,373.37
TOTAL	627.57	723.31	819.64	988.09	1,097.31	1,189.36	1,281.23	1,371.90	1,398.52	1,428.85	1,462.64	1,495.80	1,528.25	1,576.67	1,624.44	1,671.28	1,717.28	1,762.40	1,805.92

**Water Industry Commissioner For Scotland
Cashflow Statement**

Cash Flow Statement	Audited Actuals 00/01	WA Budget 01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Operating Profit	75.76	70.86	111.32	138.06	152.81	150.08	163.62	173.10	182.36	187.86	191.23	211.66	215.19	218.95	223.05	227.23	231.00
Add Back Depreciation	31.48	41.82	53.66	69.70	78.15	82.79	77.20	74.55	72.19	73.74	75.33	77.66	79.28	80.80	82.11	83.42	85.27
Amortisation of grants and contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Add Back Infrastructure Renewal Charge	34.50	60.25	42.82	45.39	82.39	87.91	85.76	86.00	86.23	86.34	86.44	88.81	88.82	88.75	88.61	88.45	88.20
Changes in Working Capital	14.80	17.60	19.27	3.27	4.40	0.78	0.70	0.71	0.73	0.74	0.75	0.77	0.79	0.80	0.82	0.83	0.85
Exceptional Items (Spend to Save OPEX)	12.47	-	18.32	38.92	11.45	-	-	-	-	-	-	-	-	-	-	-	-
Sources of Funds From Operations	144.06	155.34	170.22	217.49	306.30	321.57	327.28	334.36	341.50	348.69	353.76	358.90	364.08	369.31	374.60	379.93	385.32
Investment Sources and Uses of Funds																	
Infrastructure Renewal	62.57	42.54	25.11	27.67	64.67	70.20	68.05	68.29	68.51	68.63	68.73	68.81	68.82	68.75	68.61	68.45	68.20
Quality Related Investment	114.94	138.89	139.24	150.49	174.26	172.46	102.07	102.43	102.77	102.94	103.09	103.21	103.23	103.13	102.92	102.68	102.30
Other Investment (Spend to Save CAPEX)	-	-	6.87	16.03	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of tangible fixed assets	1.50	-	1.53	1.57	1.61	1.65	-	-	-	-	-	-	-	-	-	-	-
Use of Funds for Investment	176.01	181.43	169.68	192.62	237.32	241.01	170.12	170.72	171.28	171.57	171.82	172.02	172.04	171.88	171.53	171.13	170.49
Financing Sources and Uses of Funds																	
Interest paid	53.47	58.07	61.99	62.84	62.05	59.90	53.76	47.00	38.84	31.45	23.45	14.79	5.44	4.66	15.55	27.28	39.90
Taxation paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Capital Issued	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repaid	17.35	3.42	25.85	25.85	36.71	36.71	36.72	36.72	22.52	22.52	22.52	22.52	22.52	22.52	22.52	22.52	22.52
New Debt Assumed	102.73	87.58	87.30	63.81	29.29	16.05	66.68	79.93	108.86	123.15	135.98	149.57	164.08	179.57	196.09	213.57	232.21

Authority: West of Scotland Water Authority

Model name: Public Funding AIB

User: RK

Scenario flag: ЕБАВУСАРР

Date: 11-10-2001 11-18

**Water Industry Commissioner For Scotland
Asset Summary**

		98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Cost Revolutions in the year																				
1 year		-	-	-	-	-	1.2	1.2	1.3	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
3 years		-	-	-	0.6	0.9	0.9	1.2	1.2	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
4 years		-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5 years		-	-	-	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
6 years		-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
7 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 years		-	-	-	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.4	1.4	1.3	1.2	1.2	1.2
15 years		-	-	-	2.1	2.5	2.9	3.4	3.8	4.1	4.4	4.7	5.0	5.2	5.3	5.8	6.1	6.4	6.7	7.0
20 years		-	-	-	4.1	4.6	4.8	5.1	5.4	5.6	5.7	5.9	6.0	6.1	6.3	6.4	6.6	6.7	6.9	7.0
25 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 years		-	-	-	0.2	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
40 years		-	-	-	6.9	7.2	7.6	8.1	8.6	8.9	9.2	9.5	9.8	10.1	10.4	10.7	11.0	11.3	11.6	11.9
60 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years		-	-	-	0.3	0.6	0.9	1.3	1.6	1.9	2.1	2.3	2.6	2.8	3.1	3.3	3.6	3.8	4.1	4.4
Infinite		-	-	-	4.3	3.7	3.4	3.6	3.0	2.6	2.2	1.8	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Infrastructure Assets		-	-	-	0.1	0.1	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spent to Save - Capex		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		-	-	-	20.0	21.3	23.2	25.4	27.0	27.3	27.8	28.3	29.0	29.6	30.1	31.2	32.2	33.2	34.3	35.4
Cost Revolution (cumulative)		-	-	-	90.0	111.4	134.6	159.9	187.0	214.3	242.1	270.3	299.3	328.9	359.0	390.2	422.3	453.7	490.0	525.4
Deposits																				
1 year		-	-	-	5.9	5.9	30.3	24.3	26.3	30.4	30.1	17.8	17.9	17.9	18.0	18.0	18.0	18.0	18.0	18.0
3 years		-	-	-	0.1	0.1	0.9	0.8	0.9	1.0	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
4 years		-	-	-	0.6	0.6	0.9	1.8	1.8	3.0	3.2	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
5 years		-	-	-	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
6 years		-	-	-	0.3	1.6	1.7	1.7	1.7	4.3	2.8	2.8	3.2	3.2	1.9	1.9	1.9	1.9	1.9	1.9
7 years		-	-	-	-	-	-	-	-	6.2	6.3	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
10 years		-	-	-	0.0	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
15 years		-	-	-	3.7	3.8	5.9	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1
20 years		-	-	-	10.9	11.0	11.2	11.4	11.5	11.7	11.9	12.1	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6
25 years		-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
30 years		-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
40 years		-	-	-	7.3	7.4	7.5	7.7	7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.6	8.8	8.9	9.0	9.2
60 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infinite		-	-	-	67.7	50.4	53.3	91.3	97.3	95.3	96.1	96.7	97.3	97.8	99.8	99.8	99.8	99.8	99.8	99.8
Infrastructure Assets		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spent to Save - Capex		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		1.4	1.9	1.4	106.4	89.6	117.4	158.0	178.1	166.3	165.8	155.3	156.4	167.2	131.8	132.2	135.5	135.7	130.2	130.4

Water Industry Commissioner For Scotland
Asset Summary

Depreciation as at 1 April		98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year																				
3 years	1.3	3.3	6.2	10.5	14.9	20.5	25.5	18.6	21.1	23.7	19.4	11.3	11.2	11.2	11.1	11.0	11.0	10.9	10.7	10.6
4 years	0.9	1.4	1.1	1.7	1.5	1.1	1.3	1.1	0.1	0.2	0.2	0.0	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
5 years	0.0	0.1	0.3	0.7	1.1	2.0	3.3	5.6	5.2	5.2	5.2	4.3	4.3	4.3	3.1	3.1	3.1	3.1	3.1	3.1
6 years	0.8	1.9	2.6	4.1	3.9	3.8	3.8	4.1	4.6	4.6	3.2	3.2	2.9	2.0	0.8	0.8	0.7	0.7	0.6	0.6
7 years																				
10 years	3.1	5.4	10.0	15.6	15.2	15.3	15.3	15.8	17.0	18.9	21.0	23.3	25.7	28.3	19.8	18.4	15.7	10.8	5.3	4.9
15 years																				
20 years	10.0	16.6	22.7	30.3	30.7	32.2	35.0	39.3	45.3	45.3	52.2	60.1	68.9	76.7	89.6	101.3	114.6	128.7	142.9	160.3
25 years	0.0	0.0	0.0	0.0	0.9	2.2	4.1	6.6	9.8	13.3	17.1	21.2	25.5	25.5	26.1	34.9	40.0	45.4	51.1	57.1
30 years																				
40 years	0.0	0.1	0.1	0.2	0.4	0.8	1.4	2.2	3.2	4.4	5.8	7.4	9.1	11.0	13.1	15.4	17.9	20.6	23.3	23.3
60 years	23.8	38.7	52.6	70.7	71.0	71.6	72.6	73.9	75.8	77.8	80.1	82.7	85.5	88.3	91.8	95.4	99.3	103.4	107.8	107.8
80 years																				
100 years																				
Infinite																				
Infrastructure Assets																				
Spend to Save - Capex																				
Other 1																				
Other 2																				
Other 3																				
Other 4																				
Other 5																				
Other 6																				
Other 7																				
Other 8																				
Other 9																				
Other 10																				
Total	39.3	79.9	135.7	211.7	214.5	228.1	232.8	242.9	242.9	246.7	248.4	258.1	268.3	268.3	269.4	290.3	311.7	332.7	355.0	384.2
Depreciation - Charge in the year																				
1 year																				
3 years	2.0	2.9	3.8	10.0	16.0	22.7	26.2	28.1	25.4	21.4	17.4	17.4	17.4	17.4	17.2	17.5	17.3	17.3	17.4	17.4
4 years	0.7	0.0	0.7	0.6	0.6	0.7	0.7	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.9	0.6	0.6	0.6	0.6
5 years	0.1	0.2	0.4	0.9	1.4	2.5	3.2	3.0	2.9	2.7	2.4	2.1	2.1	2.1	2.1	2.9	2.1	2.1	2.1	2.1
6 years	1.1	0.8	1.5	1.3	1.5	1.7	1.9	2.1	2.9	2.5	2.4	2.4	2.2	2.0	1.8	1.8	1.8	1.8	1.8	1.8
7 years																				
10 years	2.4	4.6	4.8	5.1	5.6	6.2	6.9	7.6	7.9	8.1	8.4	8.6	8.8	8.8	9.3	9.2	8.8	8.3	7.7	7.7
15 years																				
20 years	6.6	6.4	5.9	5.3	6.7	8.0	9.7	11.3	12.2	13.1	14.0	15.0	16.0	16.0	16.9	17.9	18.9	19.9	20.9	21.9
25 years	0.0	0.0	0.0	11.6	12.2	12.8	13.6	14.5	14.8	15.2	15.6	16.0	16.4	16.4	16.8	17.2	17.5	17.9	18.3	18.7
30 years																				
40 years																				
60 years	0.1	0.1	0.1	0.4	0.5	0.7	1.0	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.4	2.6	2.8	2.9
80 years	14.8	13.9	14.4	6.3	6.9	7.3	7.8	8.4	8.7	9.0	9.3	9.7	10.0	10.3	10.7	11.0	11.4	11.7	12.1	12.1
100 years																				
Infinite																				
Infrastructure Assets																				
Spend to Save - Capex																				
Other 1		27.6	34.3	60.3	42.8	45.4	85.4	87.9	85.8	86.0	86.2	86.3	86.4	86.4	86.8	68.8	68.8	68.8	68.5	68.2
Other 3					2.3	7.7	7.8	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 4																				
Other 5																				
Other 6																				
Other 7																				
Other 8																				
Other 9																				
Other 10																				
Total	40.2	56.4	66.0	102.1	96.5	115.1	160.5	170.7	163.0	160.6	158.4	160.1	161.8	146.5	148.1	149.6	150.7	151.9	153.5	153.5

**Water Industry Commissioner For Scotland
Asset Summary**

Depreciation Revaluation		98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	-	-	-	-	0.3	0.5	0.7	0.7	0.7	0.7	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4 years	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 years	-	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6 years	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 years	-	-	-	-	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.3	0.2
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 years	-	-	-	-	0.5	0.6	0.6	0.6	0.6	0.9	1.0	1.1	1.3	1.4	1.6	1.6	1.8	2.0	2.2	2.5
25 years	-	-	-	-	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40 years	-	-	-	-	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4
60 years	-	-	-	-	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7	1.7	1.8
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infinite	-	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Infrastructure Assets	-	-	-	-	4.3	3.7	3.4	3.6	3.4	3.0	2.6	2.2	1.8	1.4	1.0	1.0	1.0	1.0	1.0	1.0
Spend to Save - Capex	-	-	-	-	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	7.1	6.8	7.0	7.5	7.5	7.2	6.9	6.6	6.5	6.5	6.2	6.6	6.9	7.3	7.6	8.1
Depreciation Revaluation (cumulative)	-	-	-	-	16.1	24.9	31.9	39.4	46.3	54.1	61.0	67.6	74.2	80.6	86.8	93.4	100.3	107.6	115.2	123.3
Depreciation (eliminated on disposal)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 years	-	-	-	-	5.9	5.9	30.3	24.3	26.3	30.4	30.1	17.8	17.9	17.9	16.0	18.0	16.0	18.0	18.0	18.0
4 years	-	-	-	-	0.3	0.6	0.9	0.8	0.9	1.0	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
5 years	-	-	-	-	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
6 years	-	-	-	-	1.8	1.7	1.7	1.7	1.7	4.3	2.6	2.8	3.2	3.2	2.2	2.2	2.2	2.2	2.2	2.2
7 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 years	-	-	-	-	5.8	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	17.9	11.3	12.2	14.2	14.0	8.3	8.3
15 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 years	-	-	-	-	5.7	5.8	5.9	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1
25 years	-	-	-	-	10.9	11.0	11.2	11.4	11.3	11.7	11.9	12.1	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6
30 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40 years	-	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
60 years	-	-	-	-	7.3	7.4	7.5	7.7	7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.6	8.8	8.9	9.0	9.2
80 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100 years	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infinite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure Assets	-	-	-	-	67.7	50.4	53.3	91.3	97.3	95.5	96.1	96.7	97.3	97.8	69.8	69.8	69.8	69.6	69.5	69.2
Spend to Save - Capex	-	-	-	-	-	-	-	7.2	16.8	-	-	-	-	-	-	-	-	-	-	-
Other 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	106.4	89.6	117.4	158.0	178.1	166.3	165.8	155.3	156.4	167.2	131.8	133.2	135.5	135.7	130.2	130.4

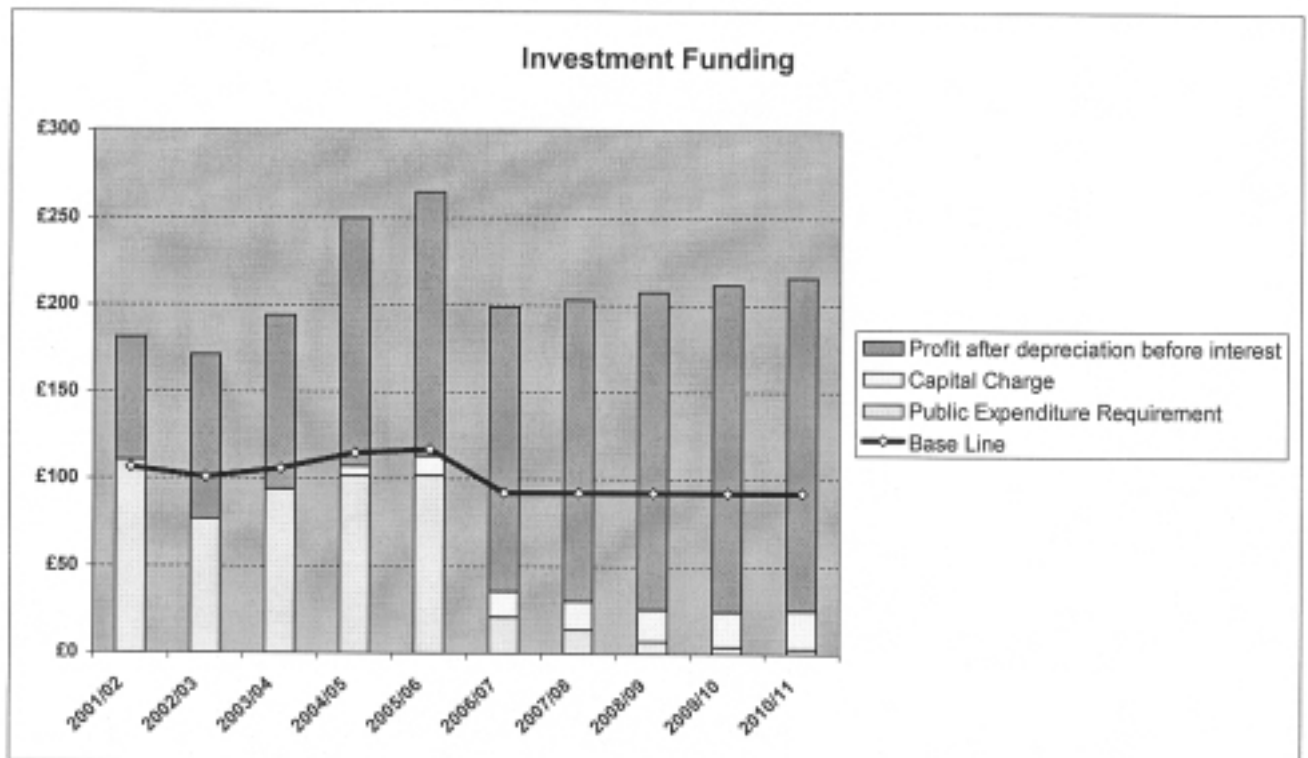
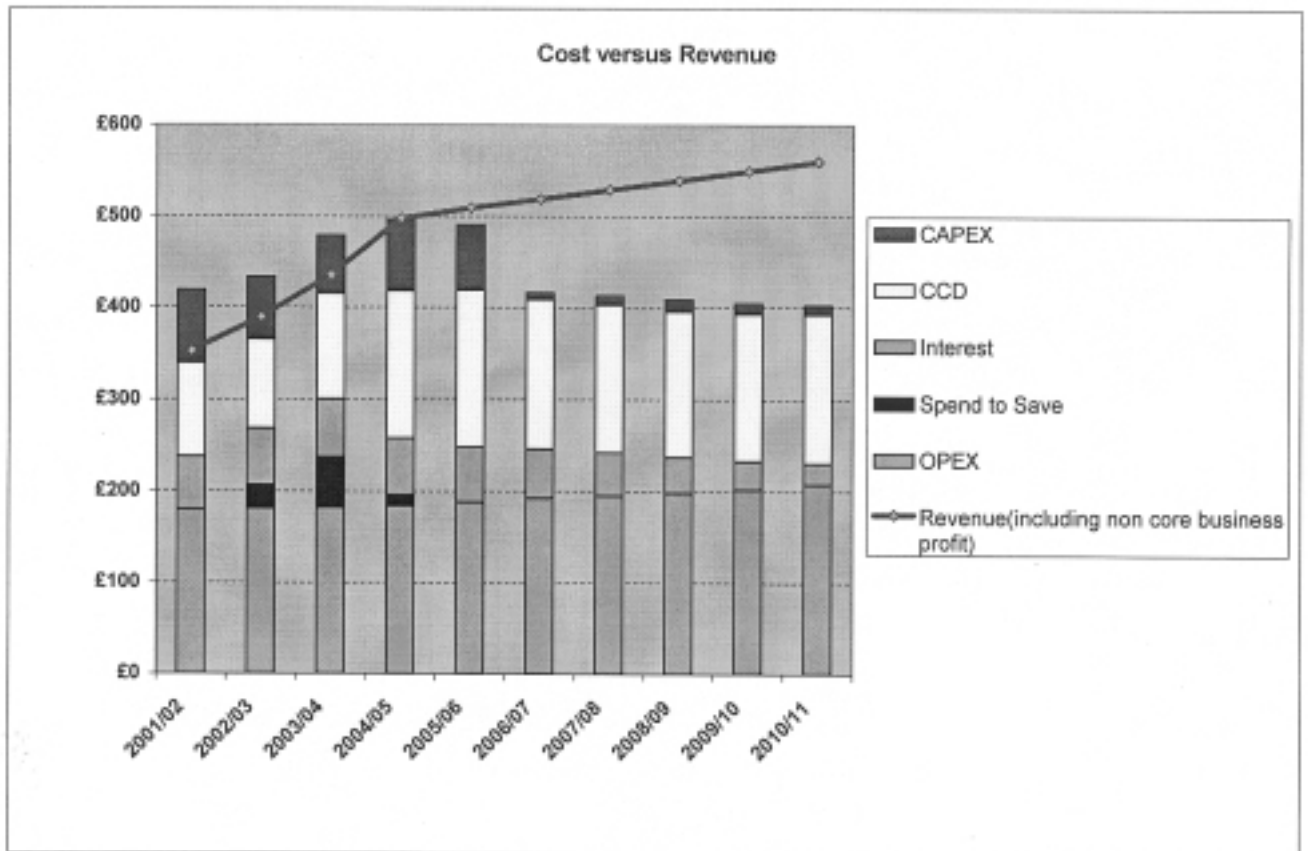
**Water Industry Commissioner For Scotland
Asset Summary**

Net Book Value	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
1 year	6.9	6.8	6.3	20.3	28.0	30.9	34.3	35.5	27.6	23.7	23.8	23.9	24.1	24.2	24.3	24.4	24.5	24.5	24.6
3 years	2.1	2.1	1.4	1.8	2.1	2.4	2.7	2.8	2.6	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.5
5 years	0.7	1.5	1.7	3.8	5.2	6.4	7.5	7.9	7.0	6.2	5.7	5.4	5.4	5.4	5.5	5.5	5.5	5.5	5.5
7 years	6.2	6.6	5.1	6.7	7.7	8.7	10.0	10.9	9.9	9.3	8.8	8.4	8.3	8.4	8.4	8.5	8.5	8.6	8.6
10 years	25.7	35.5	38.5	46.5	51.4	56.6	62.9	68.3	68.6	68.6	68.5	68.1	67.5	66.3	65.3	64.6	64.5	65.0	65.4
15 years	68.0	71.8	76.3	105.7	138.9	153.4	181.4	207.8	219.3	230.4	240.6	250.0	258.6	266.3	273.2	279.1	284.1	288.1	291.0
20 years	142.6	202.6	252.0	281.5	295.3	310.2	328.3	345.5	351.6	357.4	363.0	368.3	373.3	378.0	382.4	386.4	390.2	393.3	396.3
25 years																			
30 years																			
40 years	2.7	3.9	7.1	14.5	21.5	29.0	37.6	46.1	50.8	55.4	60.0	64.5	68.9	71.2	77.4	81.6	85.6	89.4	93.2
60 years	309.6	312.3	338.4	386.5	410.8	437.0	467.5	497.5	514.8	532.1	549.4	566.6	583.8	600.9	618.0	634.9	651.7	668.3	684.8
80 years																			
100 years																			
Infinite	8.9	9.7	9.5	8.3	27.2	48.0	72.2	96.6	111.8	127.3	143.1	159.1	175.4	192.0	208.8	225.9	243.1	260.6	278.4
Infrastructure Assets	104.3	138.5	166.6	159.4	142.0	124.3	106.6	88.8	71.1	53.4	35.7	18.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Spend to Save - Capex					4.6	13.2	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other 3																			
Other 4																			
Other 5																			
Other 6																			
Other 7																			
Other 8																			
Other 9																			
Other 10																			
Total	659.8	772.9	884.1	1,034.9	1,124.9	1,220.2	1,316.4	1,407.9	1,435.2	1,466.3	1,500.8	1,534.7	1,567.9	1,617.1	1,665.6	1,713.3	1,760.1	1,806.0	1,850.4

Water Industry Commissioner For Scotland

Scenario Summary

"West of Scotland Water"



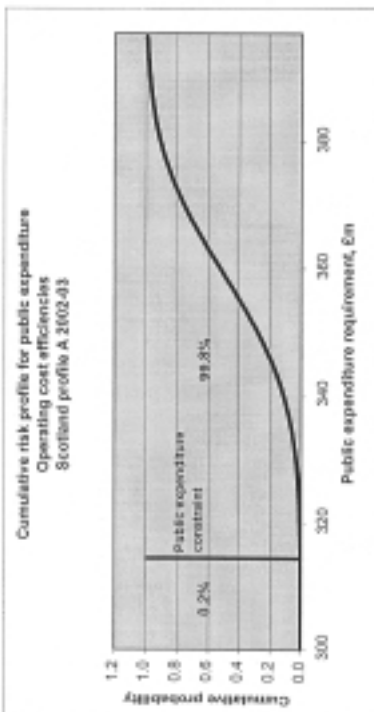
Section 9: Appendix D

Risk Analysis Tables

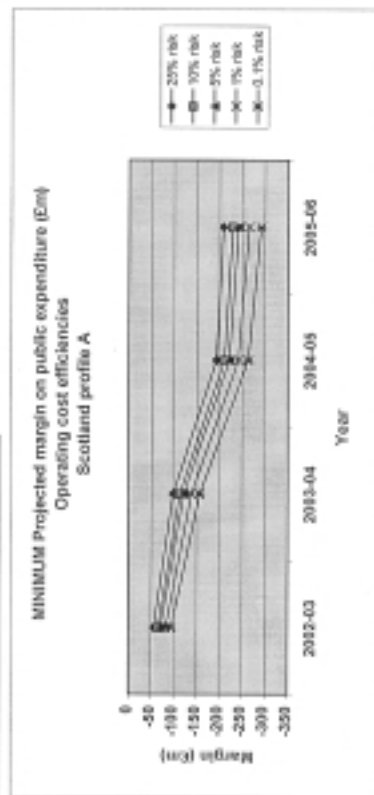
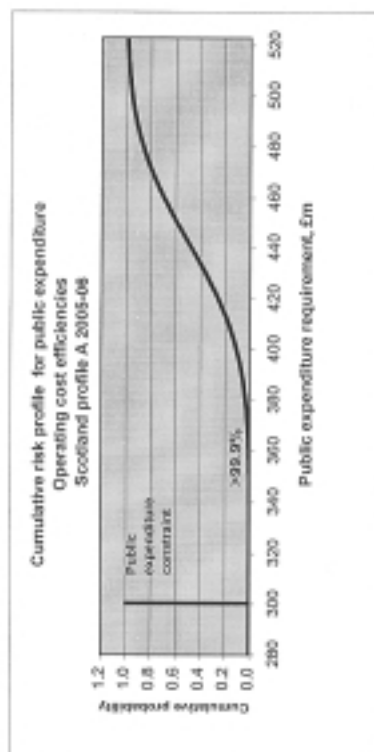
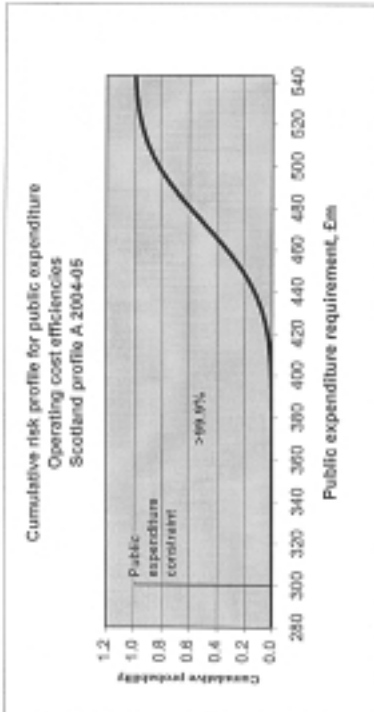
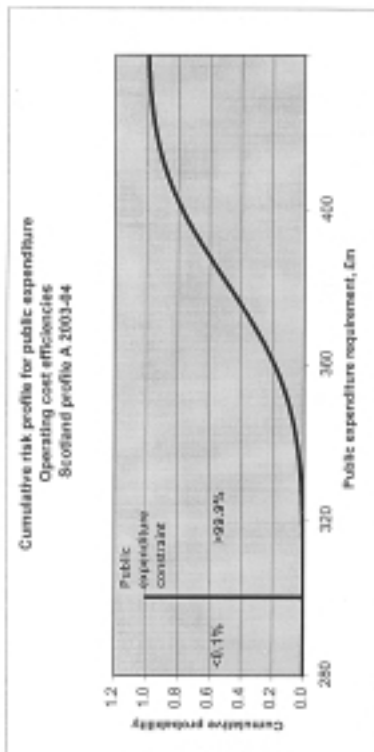
Appendix D(1): Scottish Water	474
D1a	Profile A Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
D1b	Profile B Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
D1c	Profile C Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
Appendix D(2): East of Scotland Water Authority (Resource budget in line with Commissioning Letter)	483
	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
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	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
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	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
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	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
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	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently
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	Profile D Operating expenditure risk Capital expenditure risk Operating and capital expenditure risk, combined dependently

DfA Scottish Water

Operating Efficiencies profile A



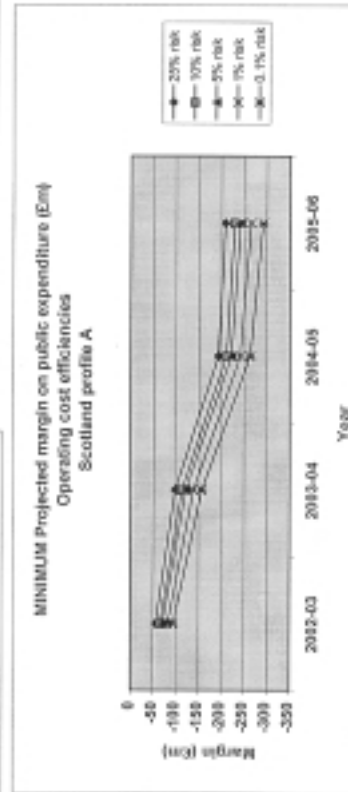
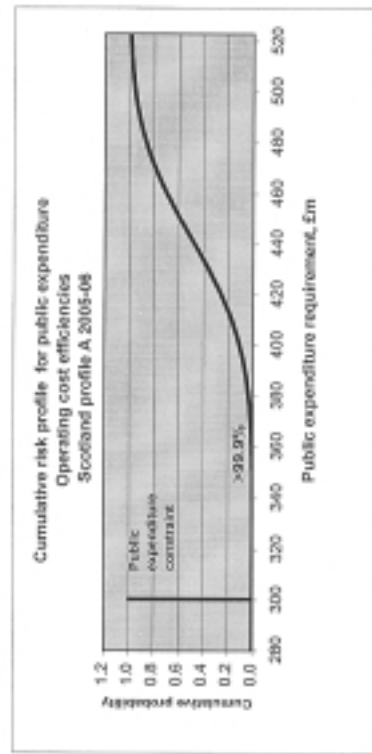
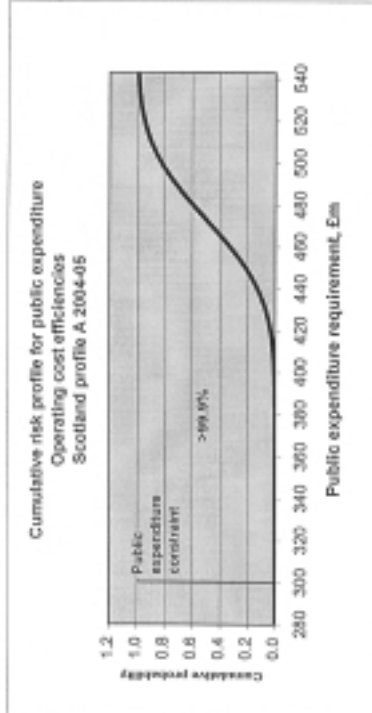
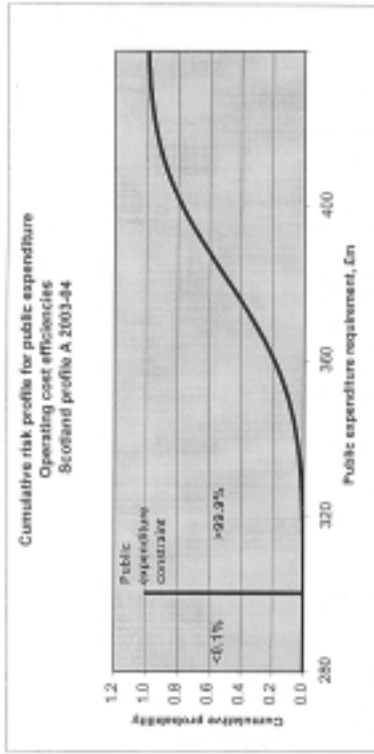
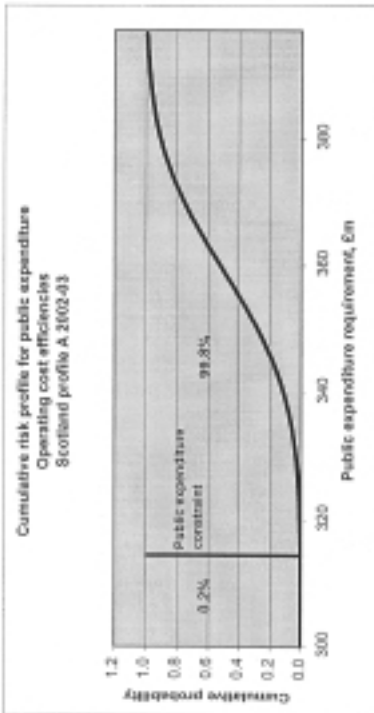
Public expenditure constraint: Commissioning letter



Dia Scottish Water

Operating Efficiencies profile A

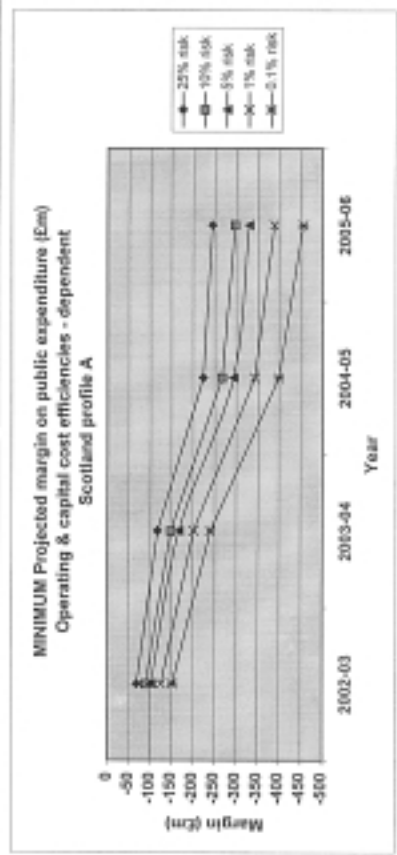
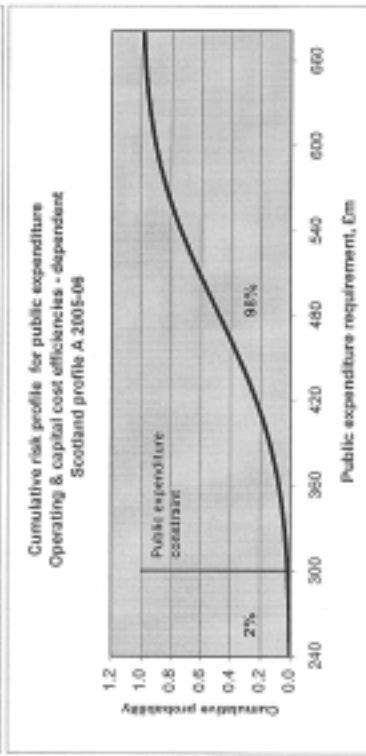
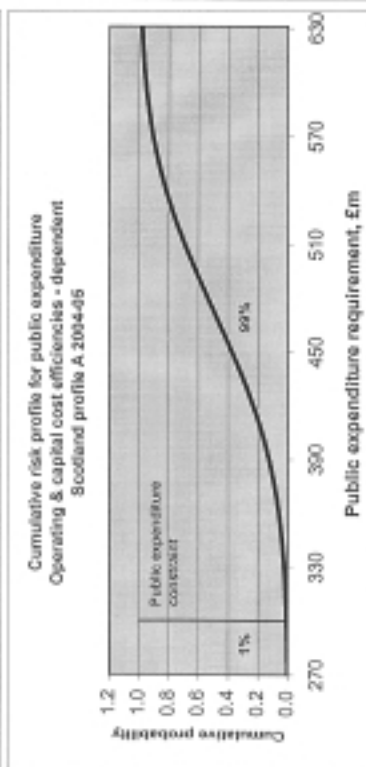
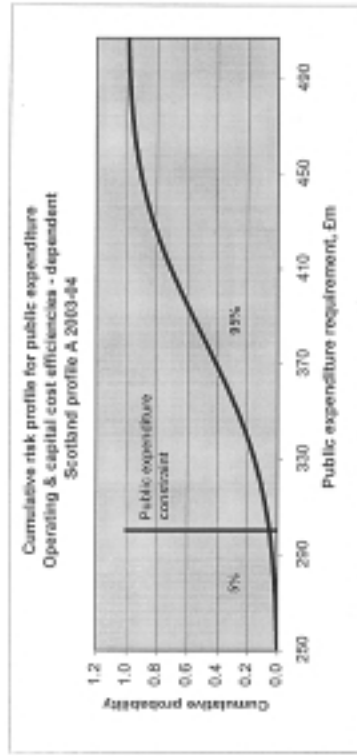
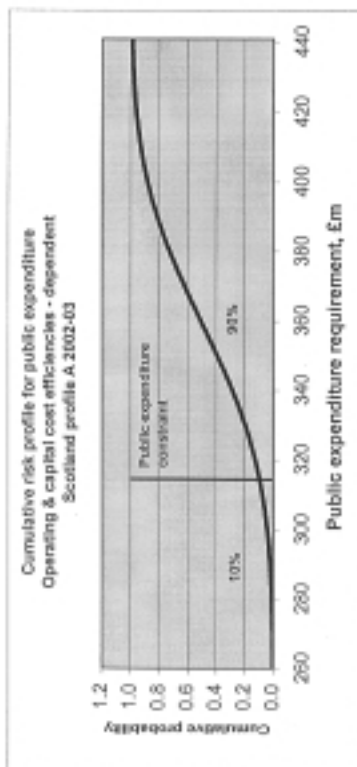
Public expenditure constraint: Commissioning letter

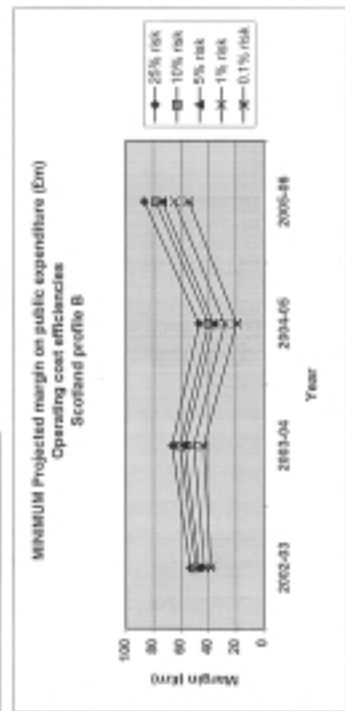
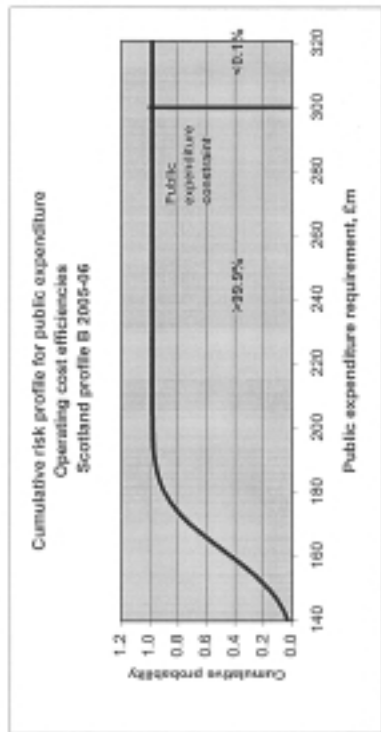
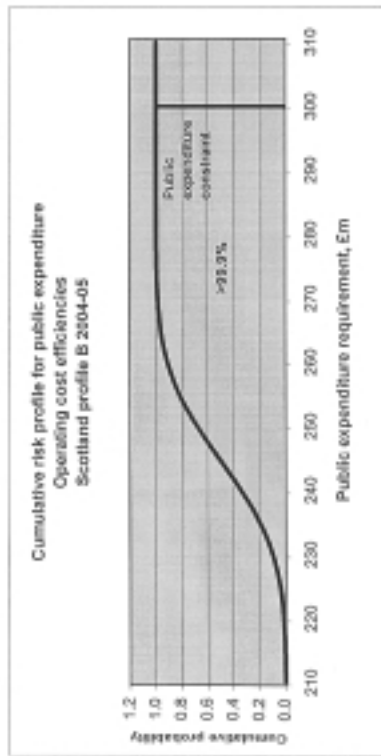
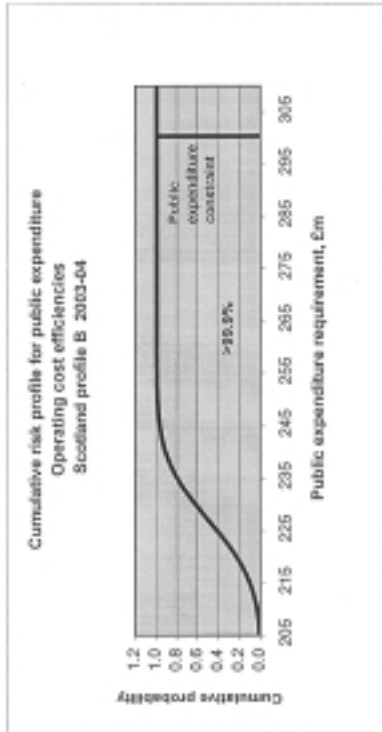
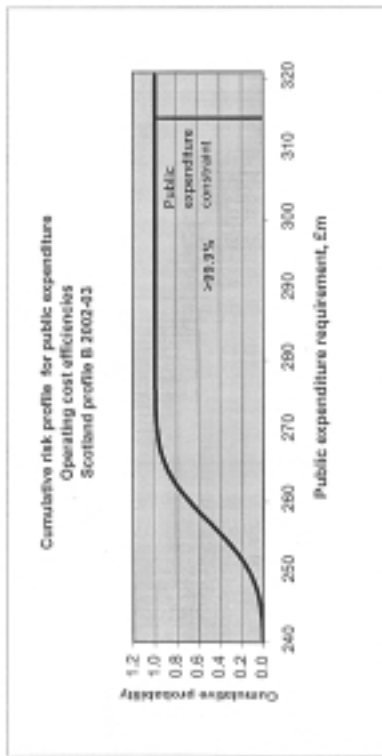


D1a Scottish Water

Operating & capital cost efficiencies dependent - profile A

Public expenditure constraint: Commissioning letter

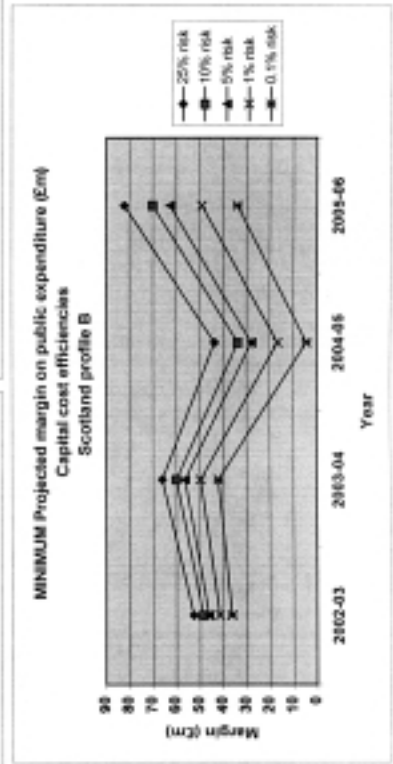
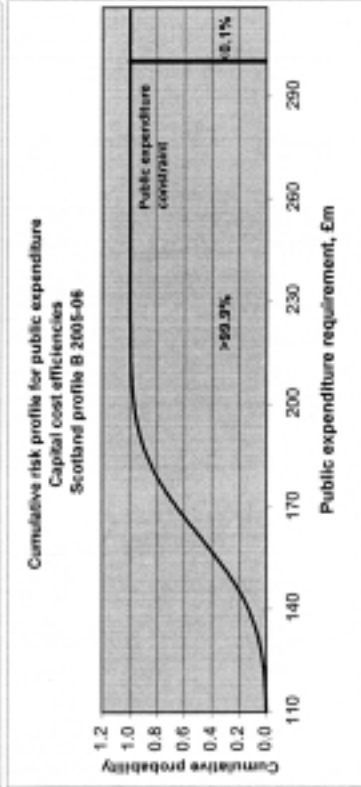
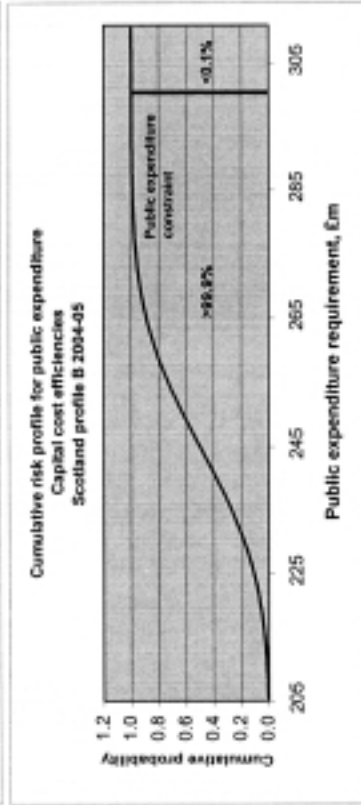
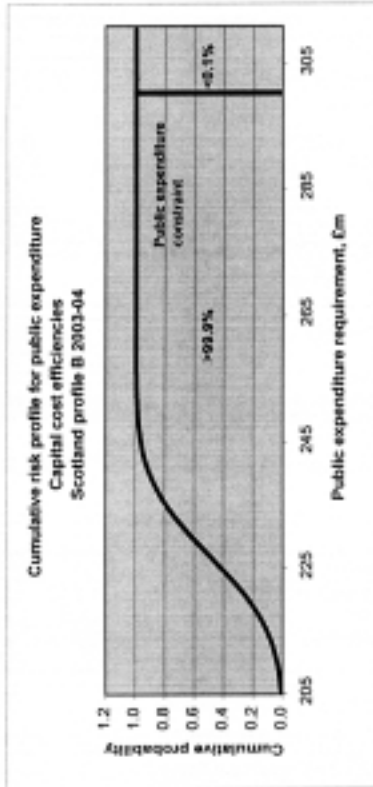
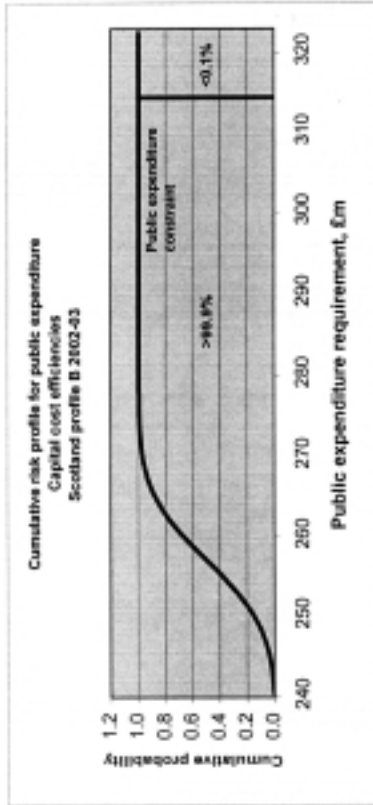




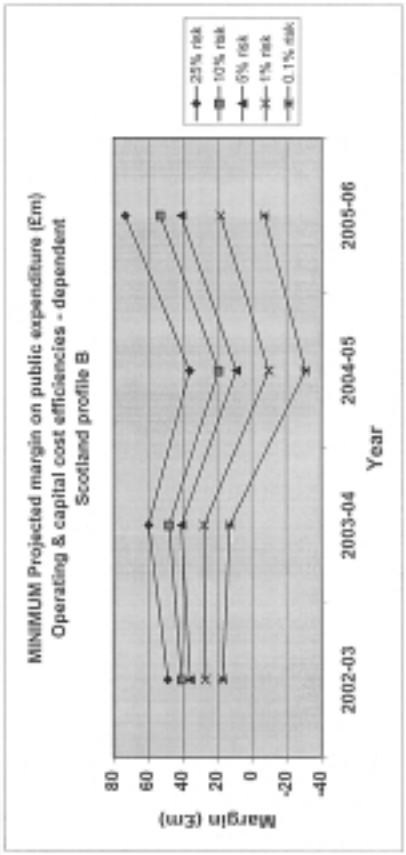
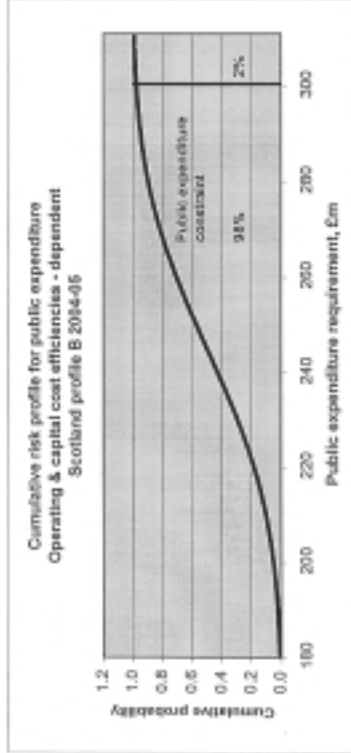
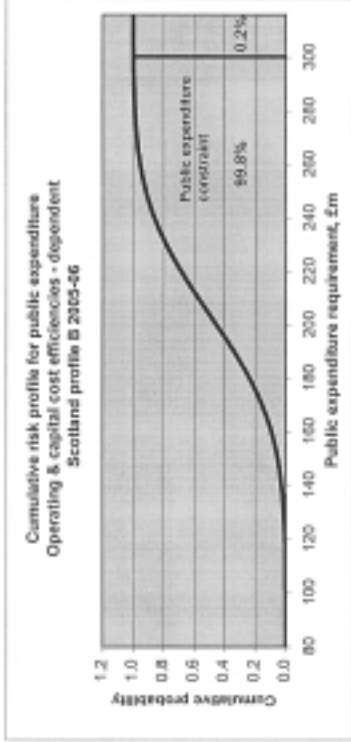
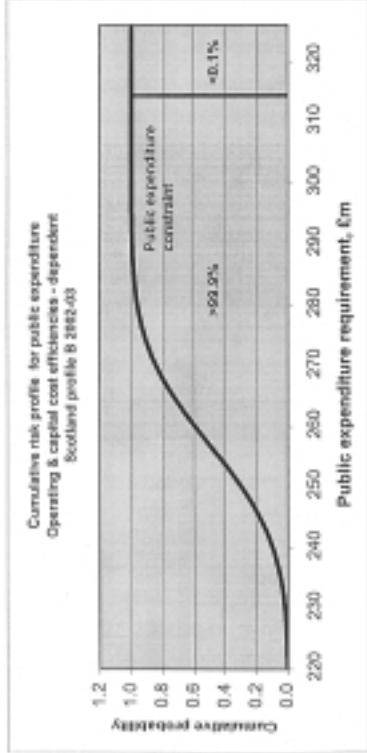
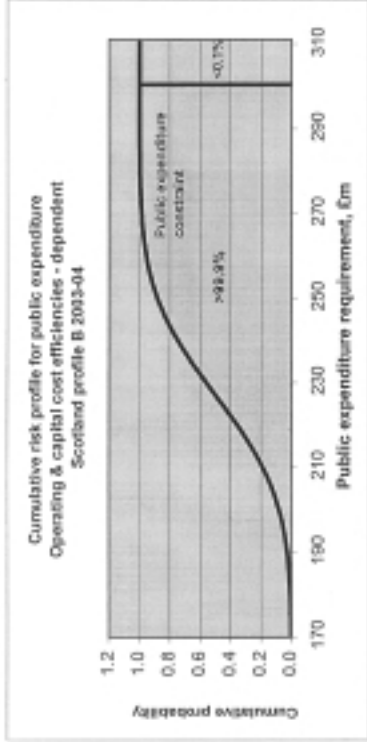
D1b Scottish Water

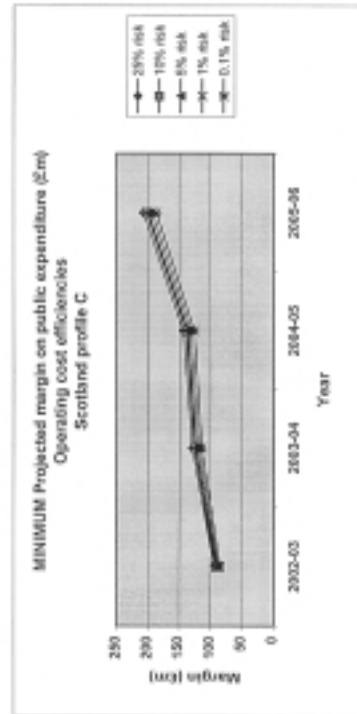
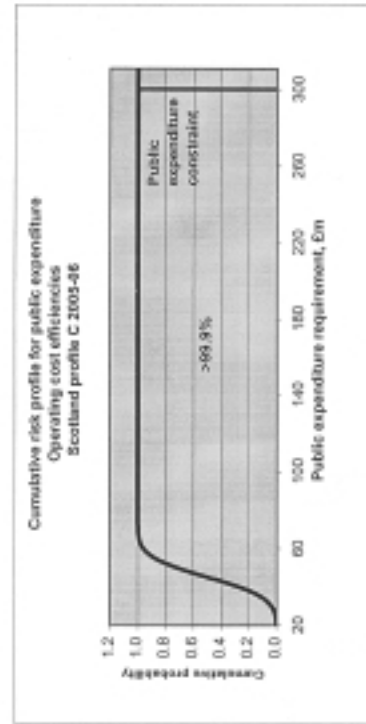
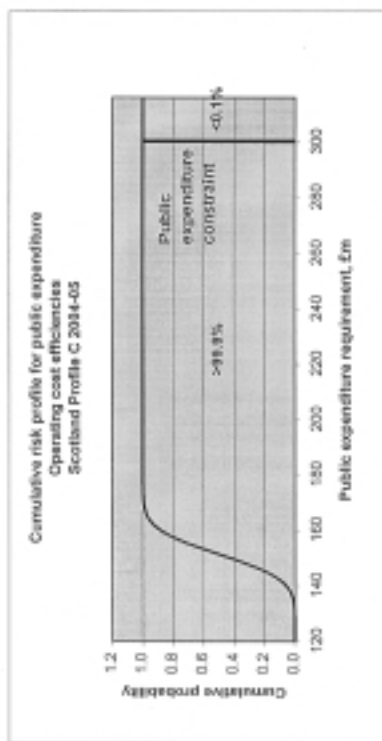
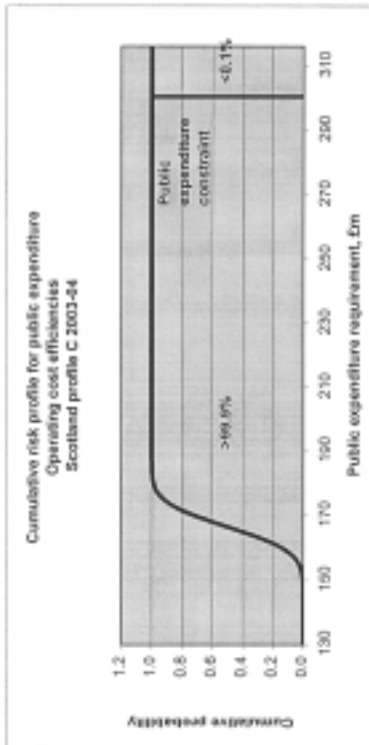
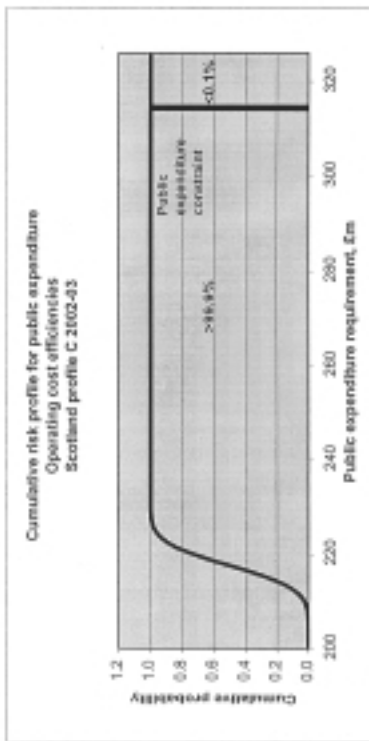
Capital cost efficiencies profile B

Public expenditure constraint: Commissioning letter



D1 b Scottish Water Operating & capital cost efficiencies dependent - profile B Public expenditure constraint: Commissioning letter

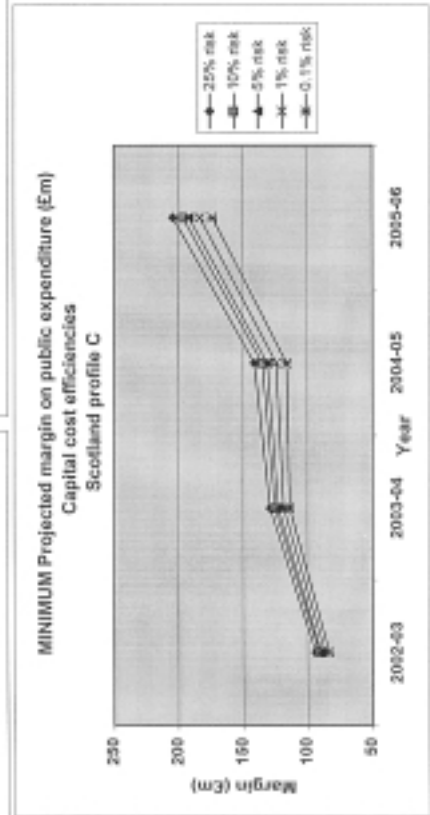
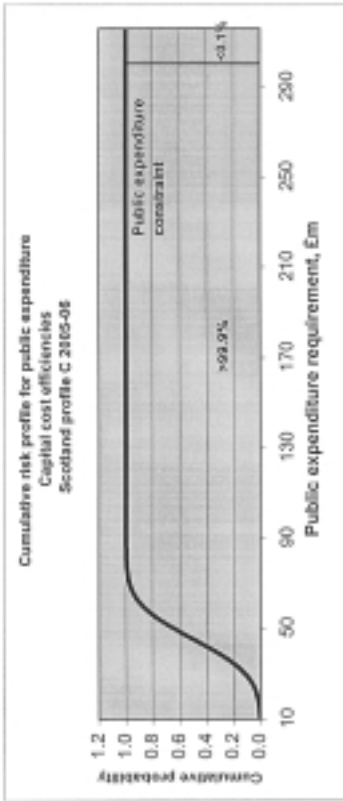
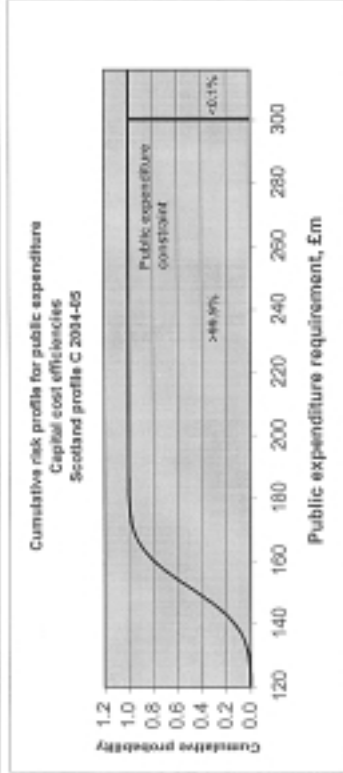
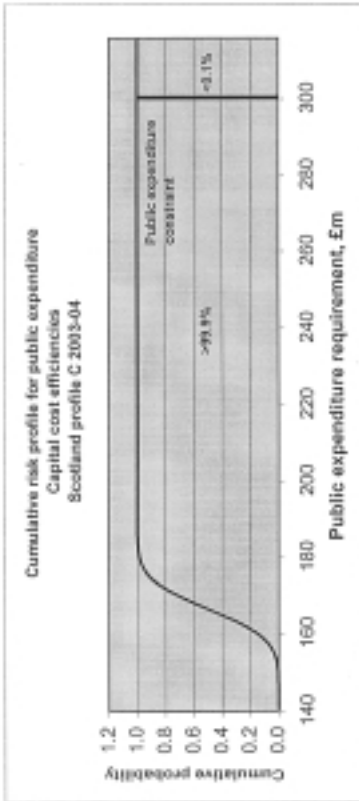
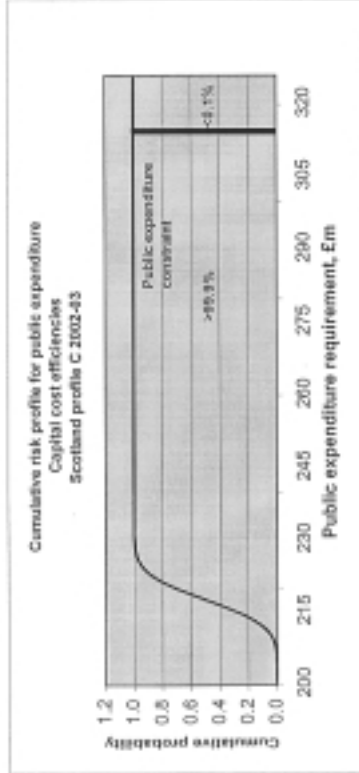




D1c Scottish Water

Capital cost efficiencies profile C

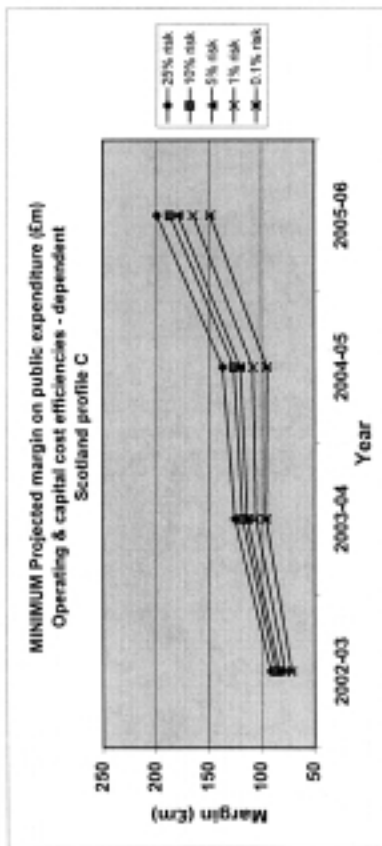
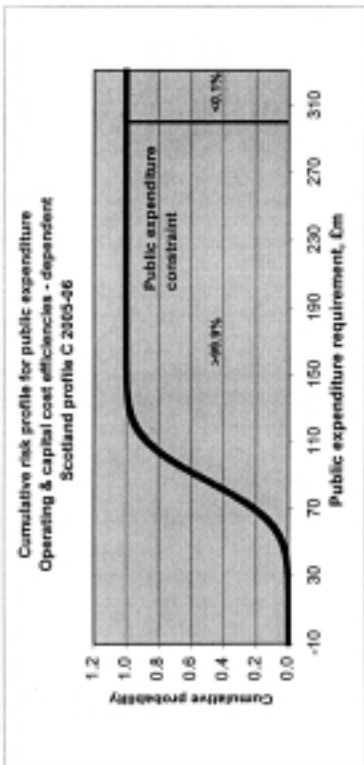
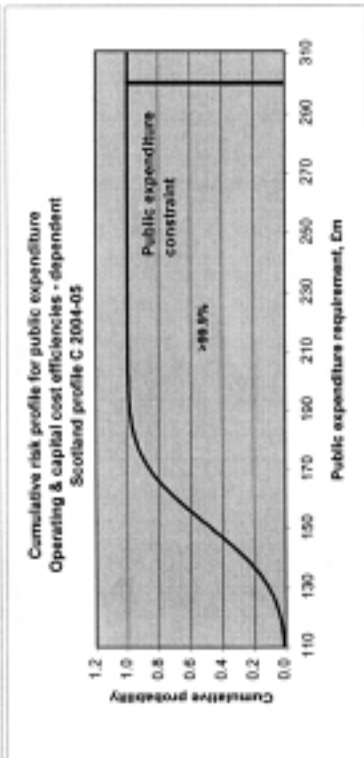
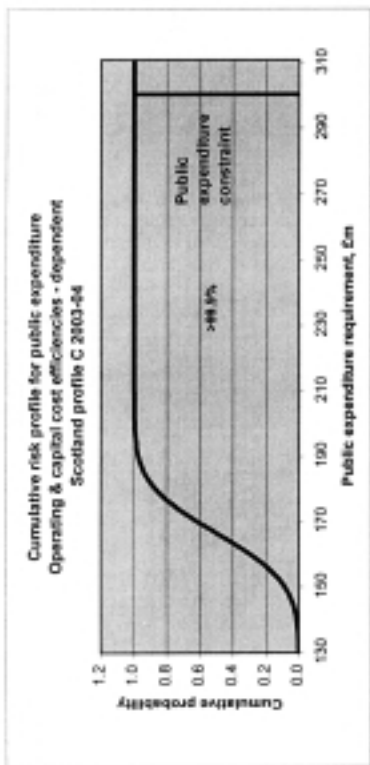
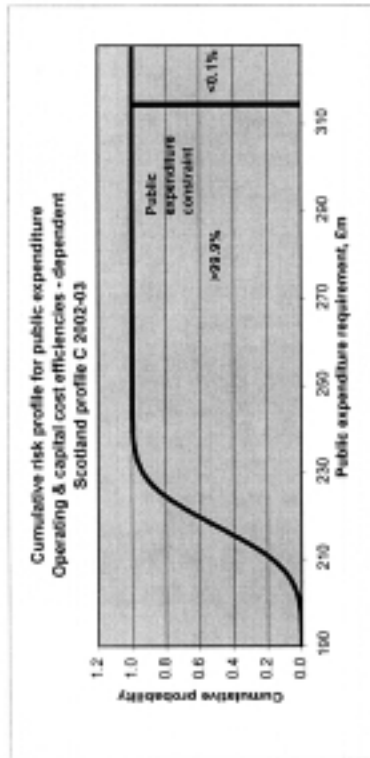
Public expenditure constraint: Commissioning letter



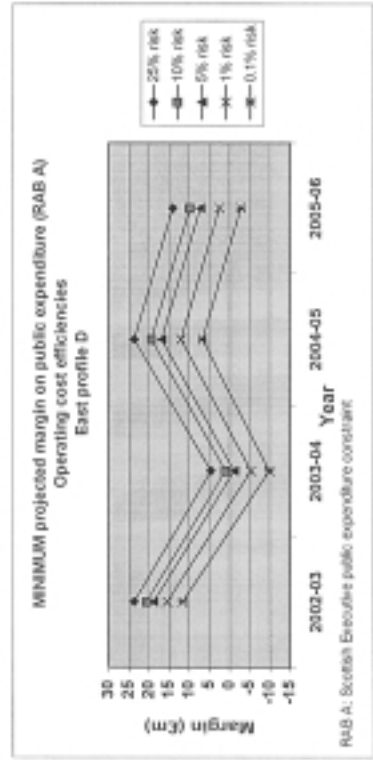
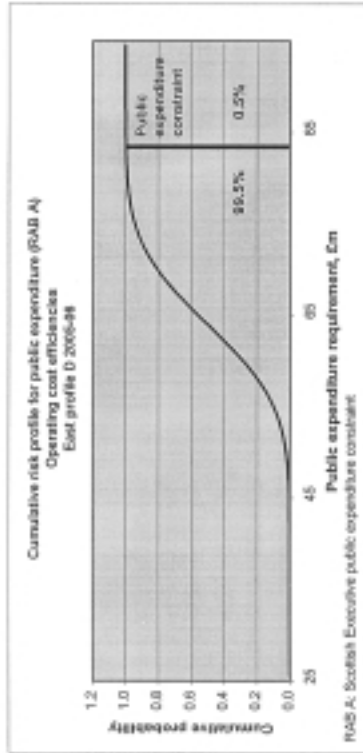
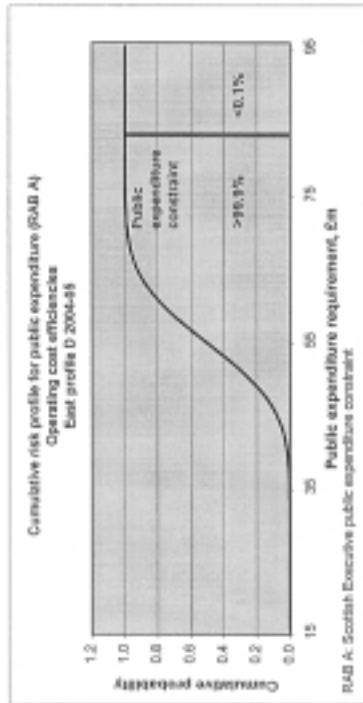
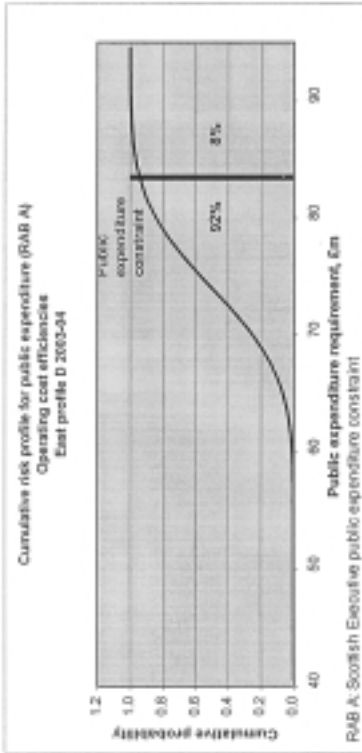
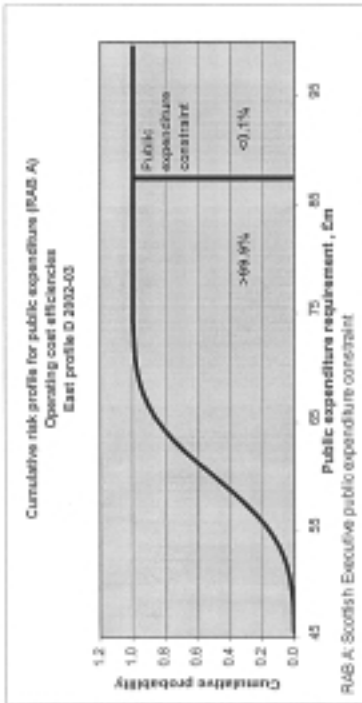
D1c Scottish Water

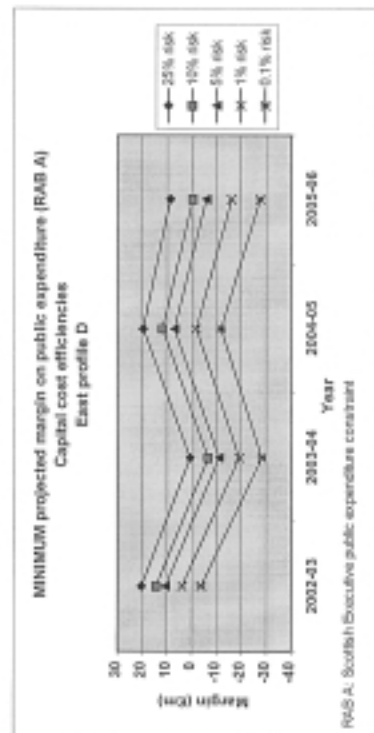
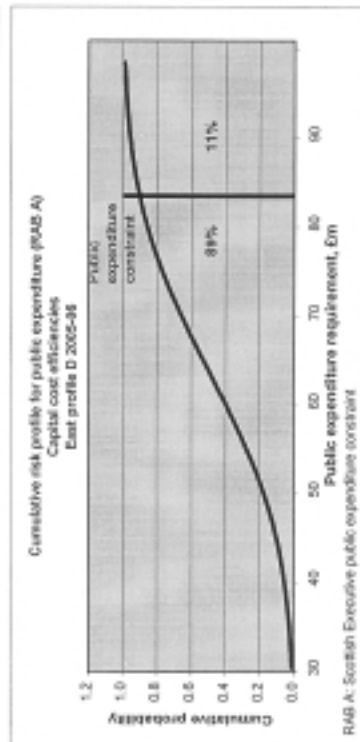
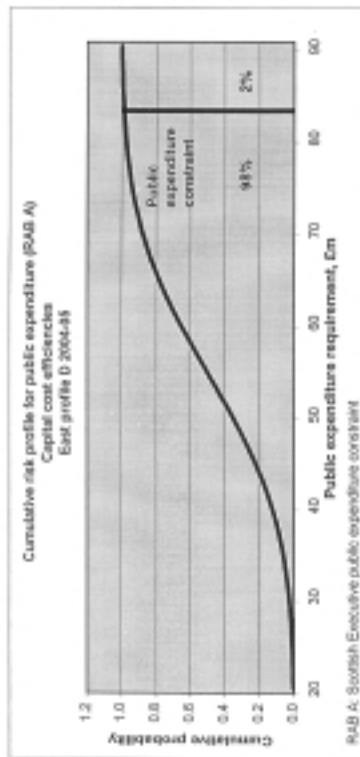
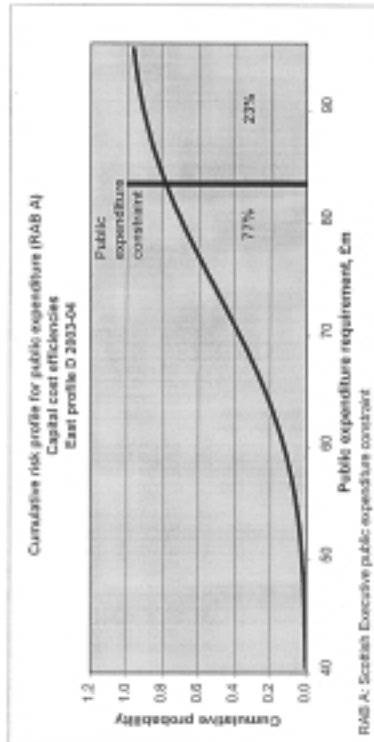
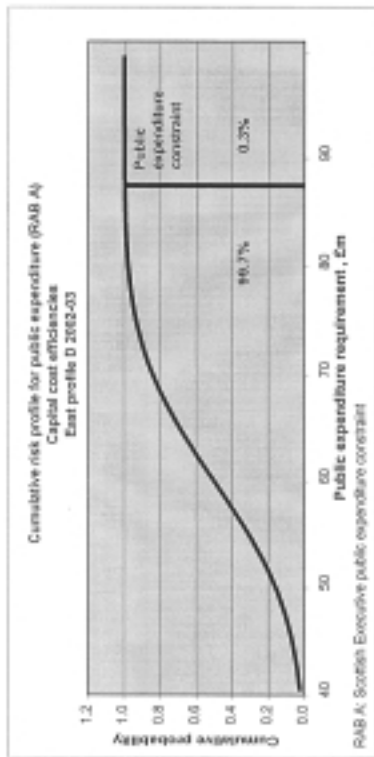
Operating & capital cost efficiencies dependent - profile C

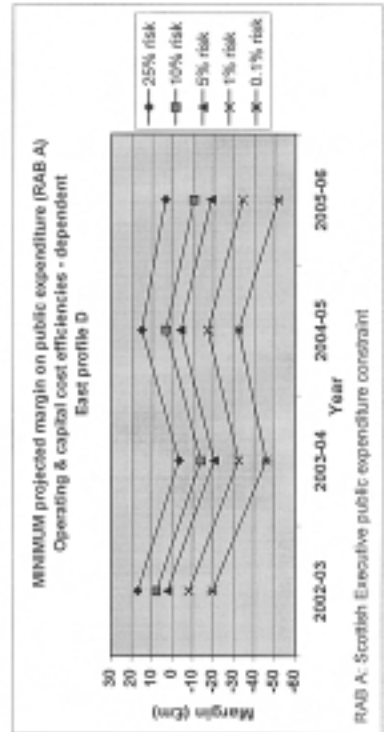
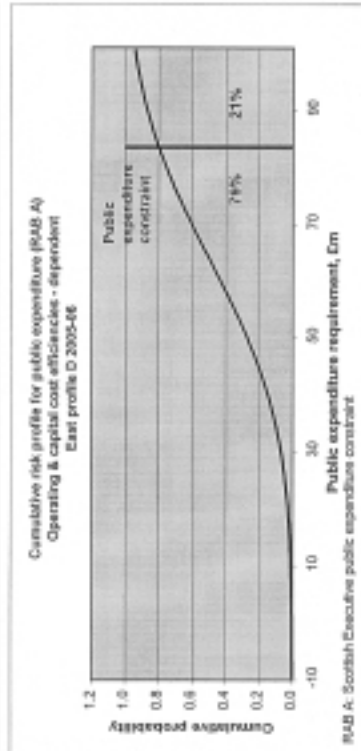
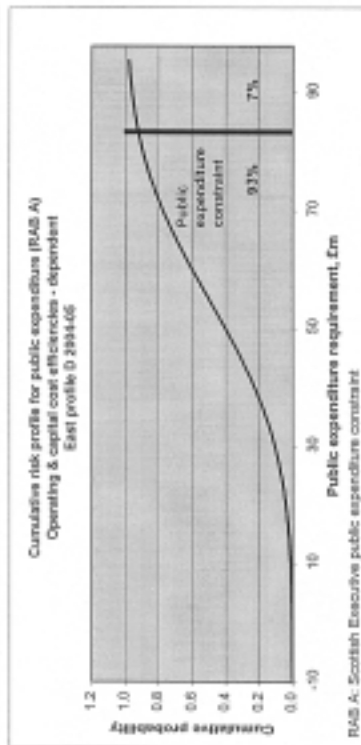
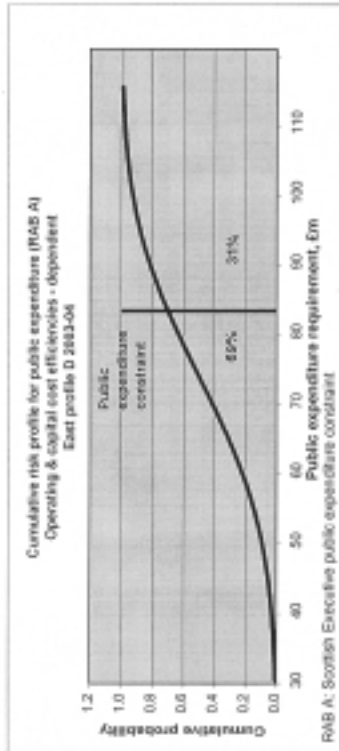
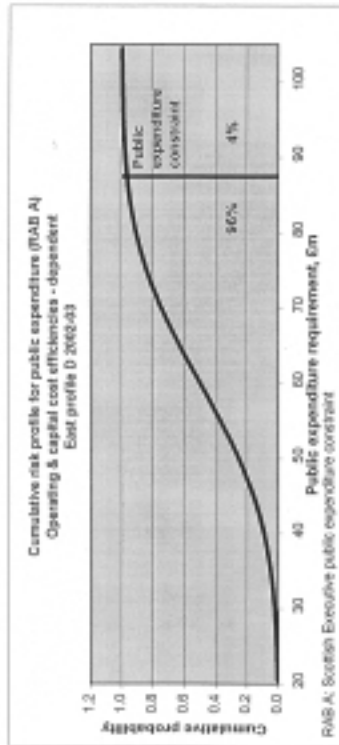
Public expenditure constraint: Commissioning letter



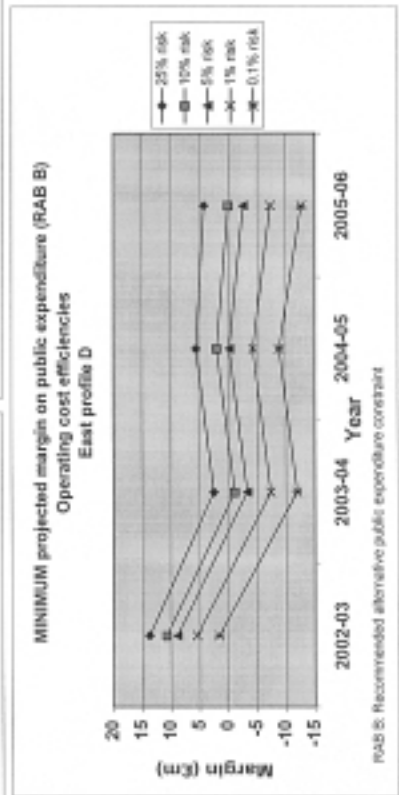
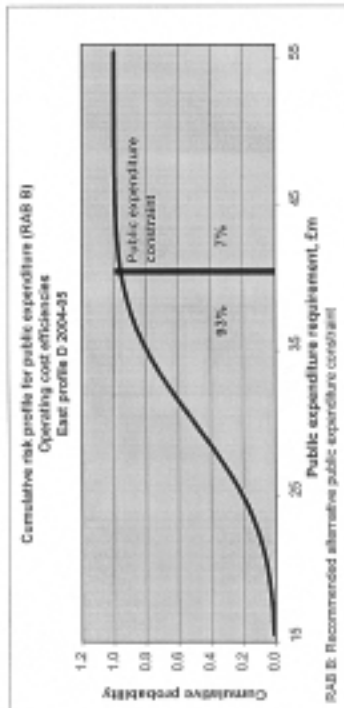
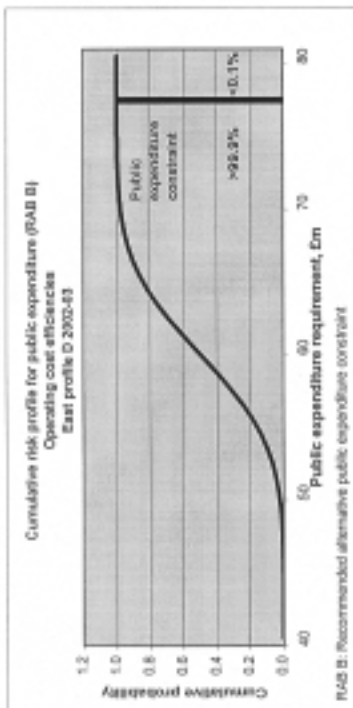
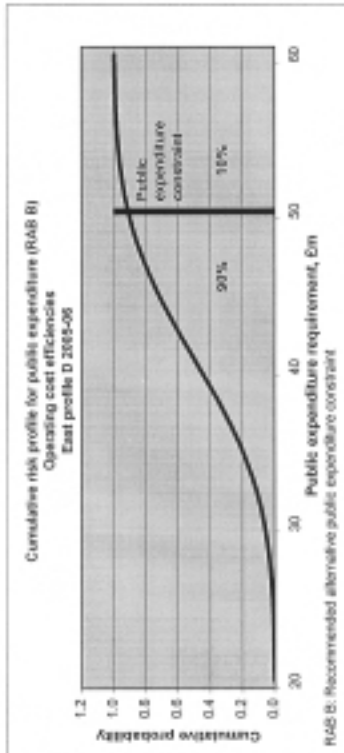
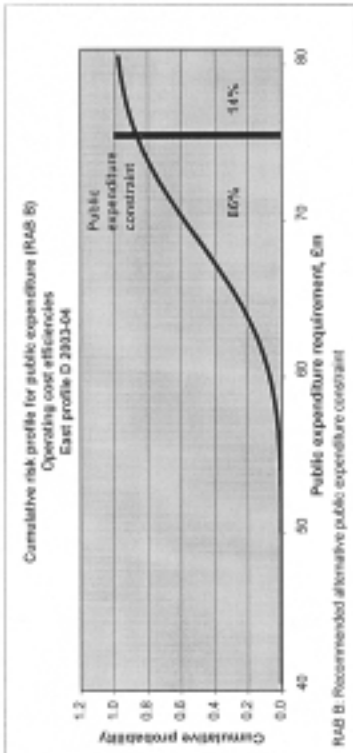
D2 East of Scotland Operating cost efficiencies Public expenditure constraint: Commissioning letter





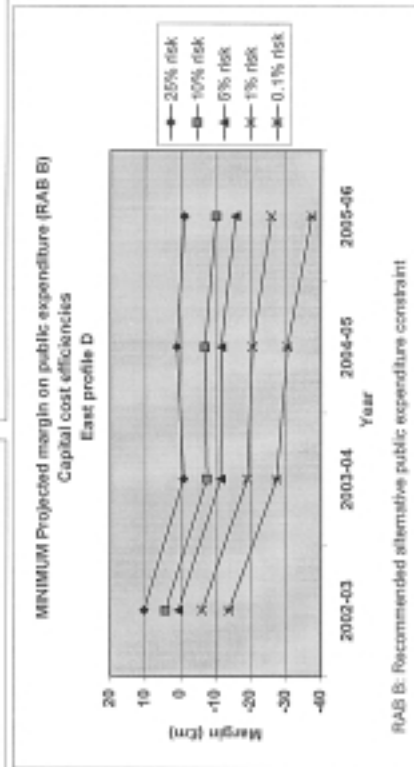
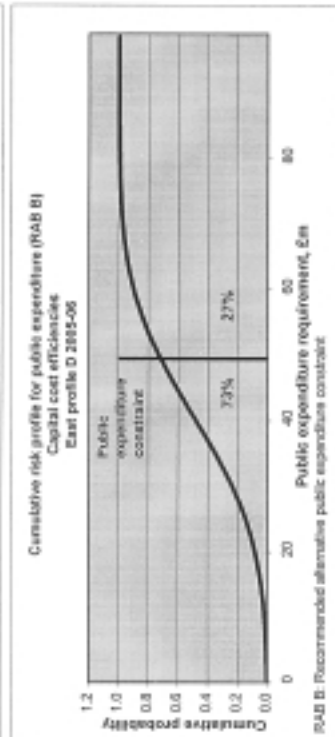
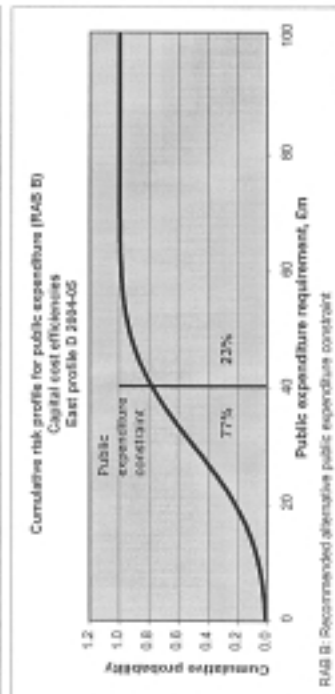
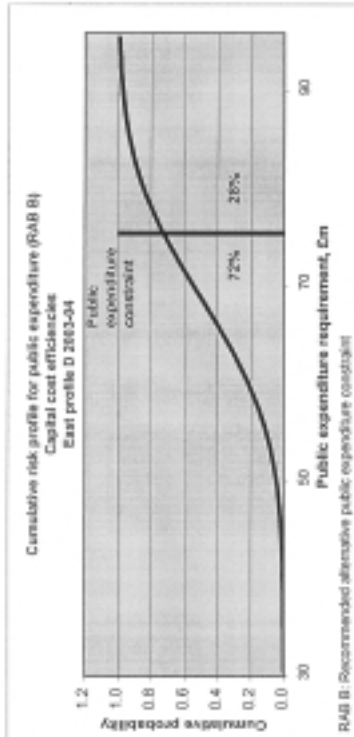
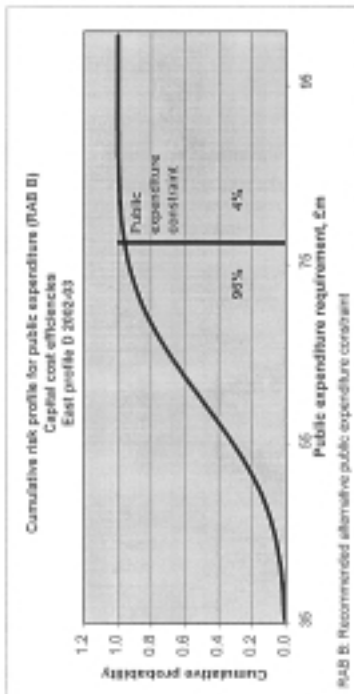


D3 East of Scotland Operating cost efficiencies Public expenditure constraint: Recommended alternative

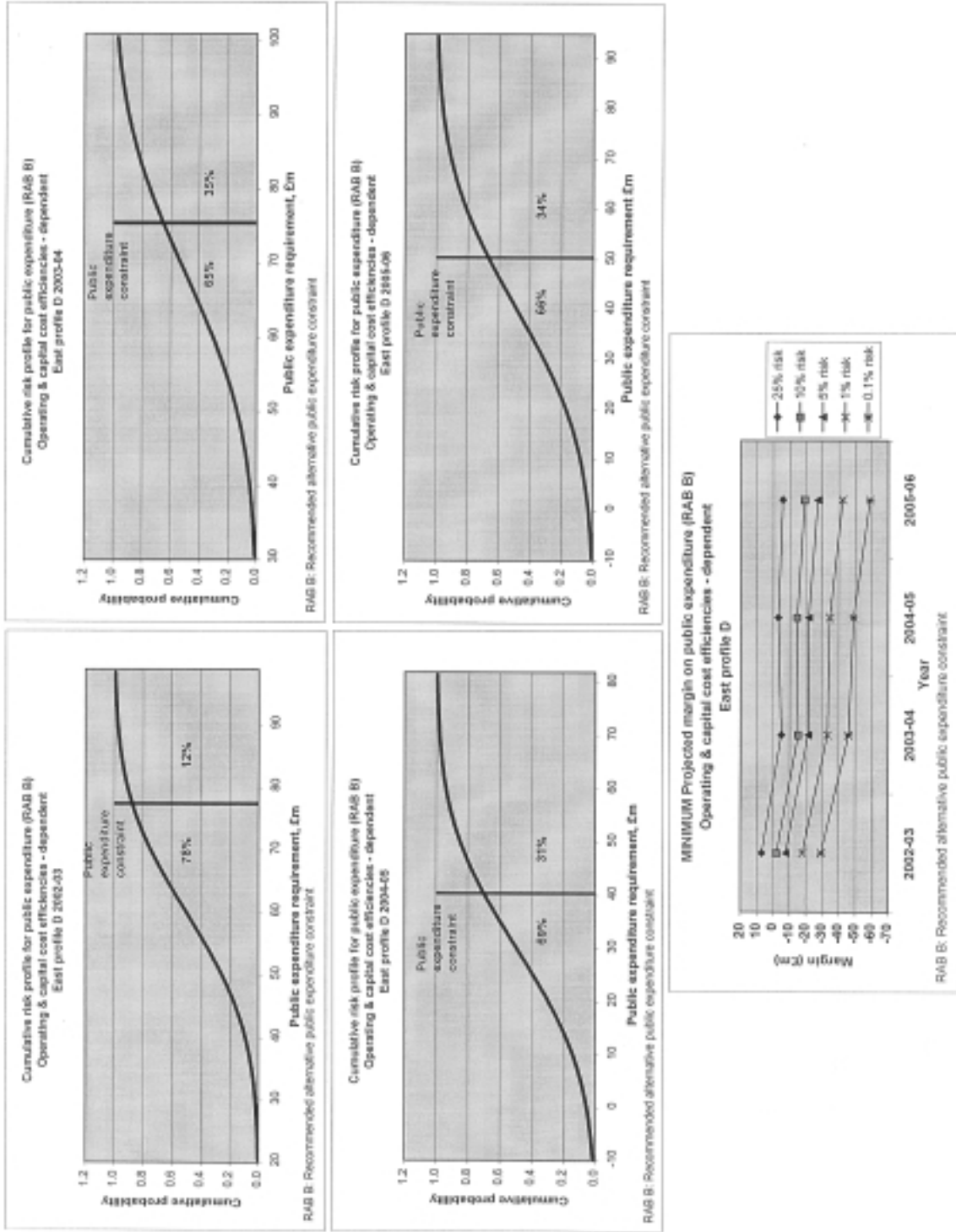


D3 East of Scotland Capital cost efficiencies

Public expenditure constraint: Recommended alternative



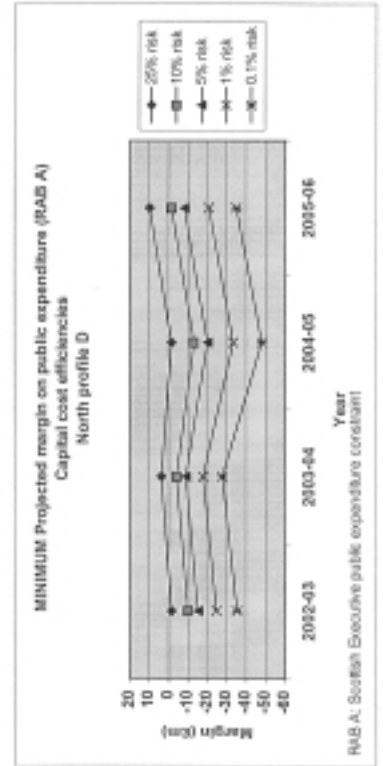
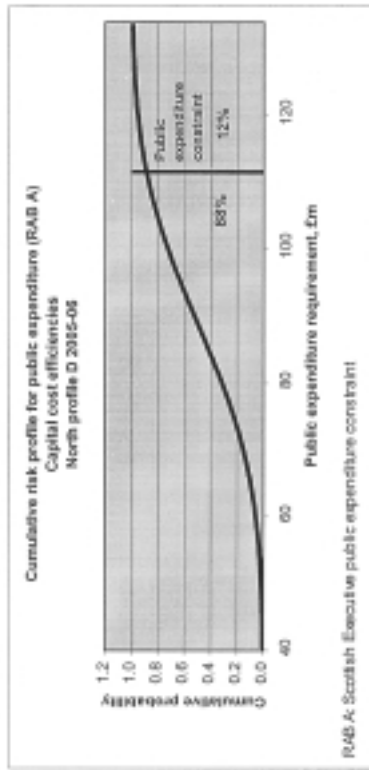
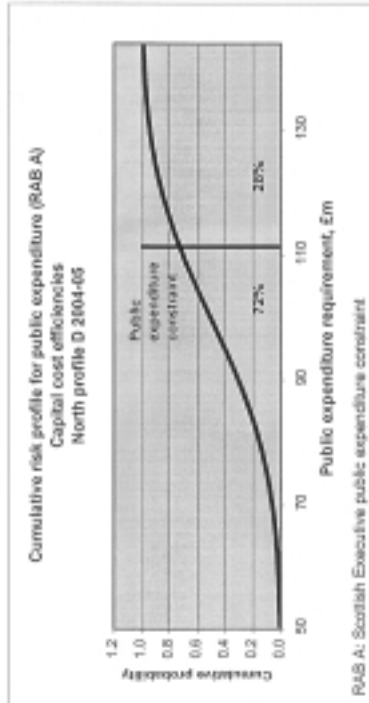
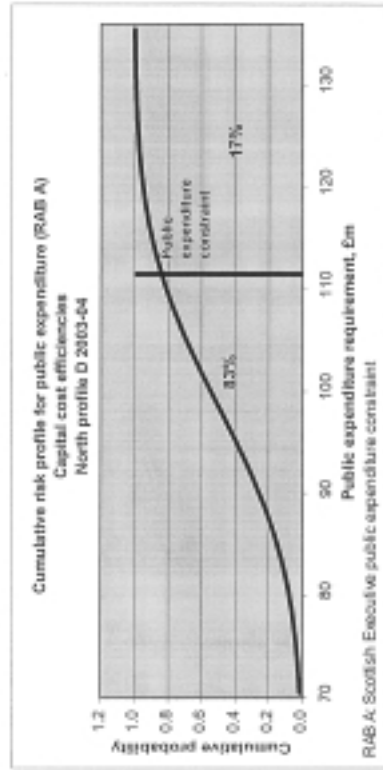
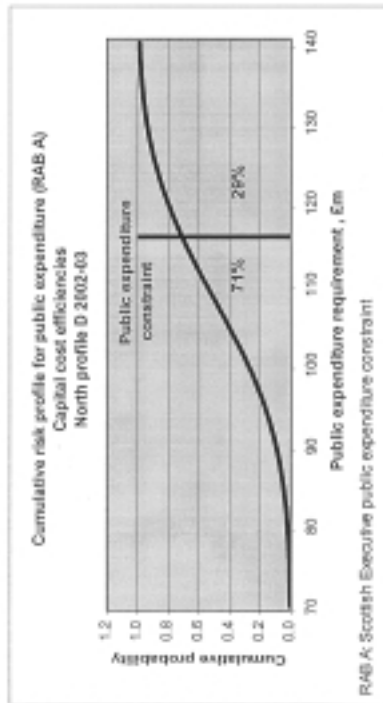
D3 East of Scotland Operating and capital cost efficiencies Public expenditure constraint: Recommended alternative



D4 North of Scotland

Capital cost efficiencies profile D

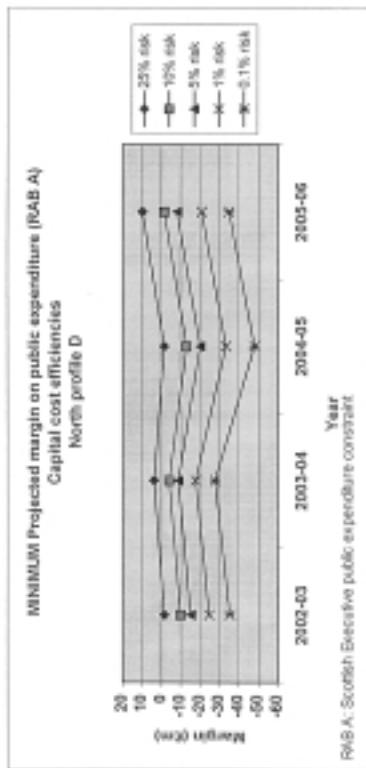
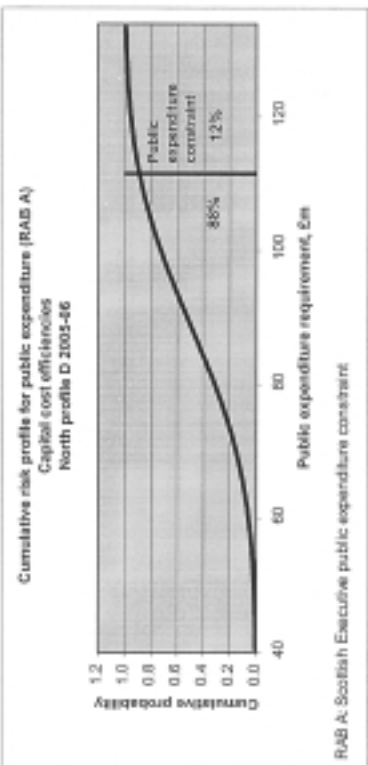
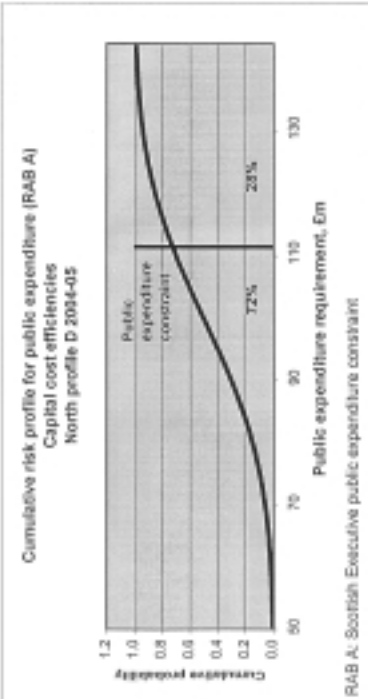
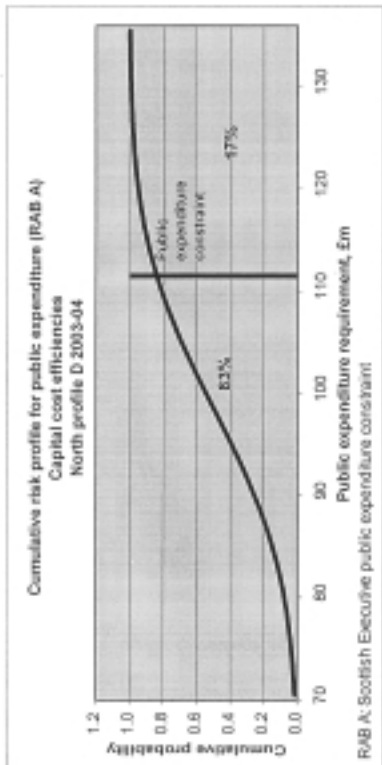
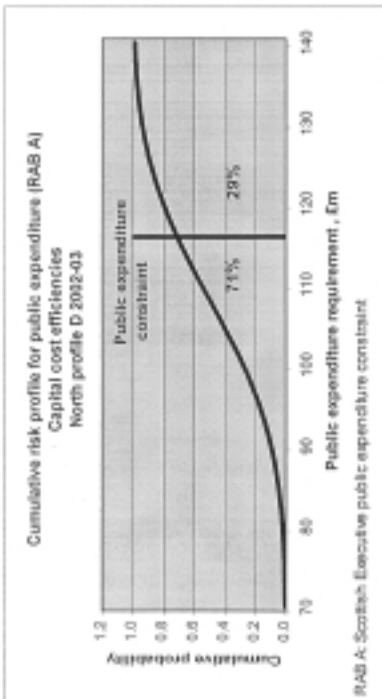
Public expenditure constraint: Commissioning letter



D4 North of Scotland

Capital cost efficiencies profile D

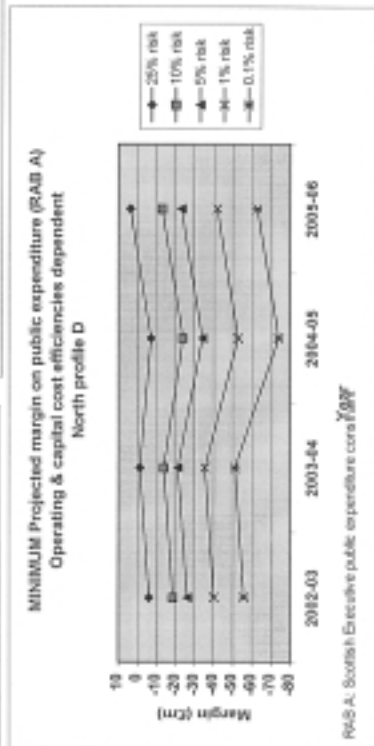
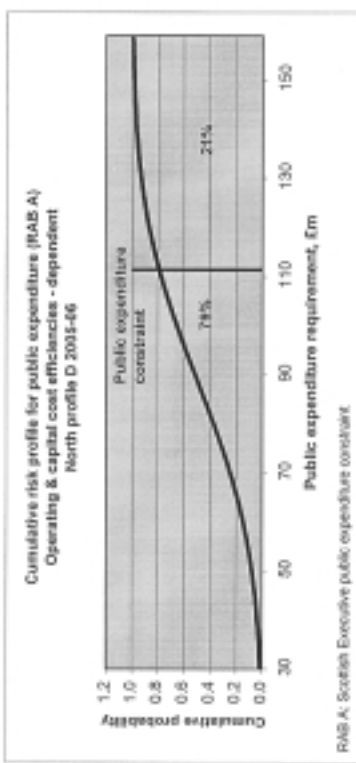
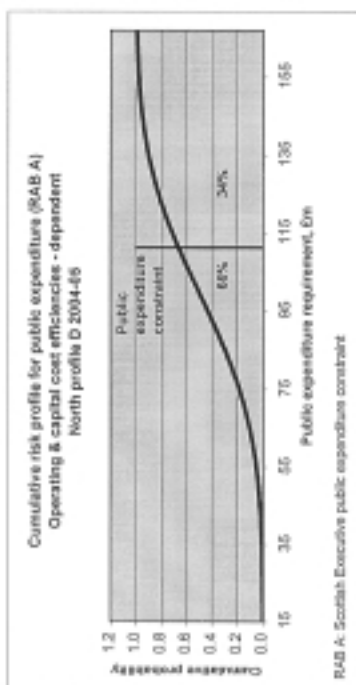
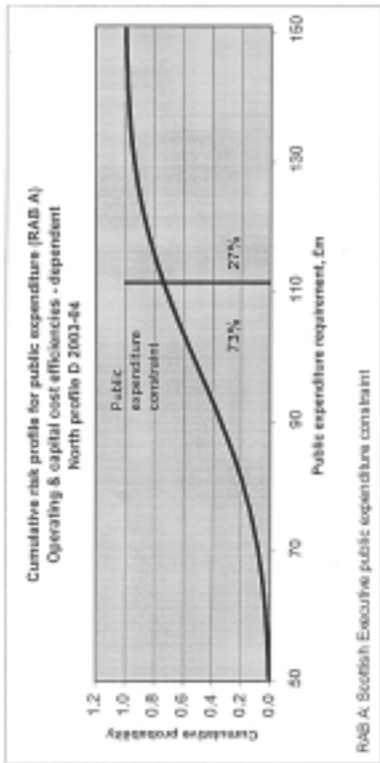
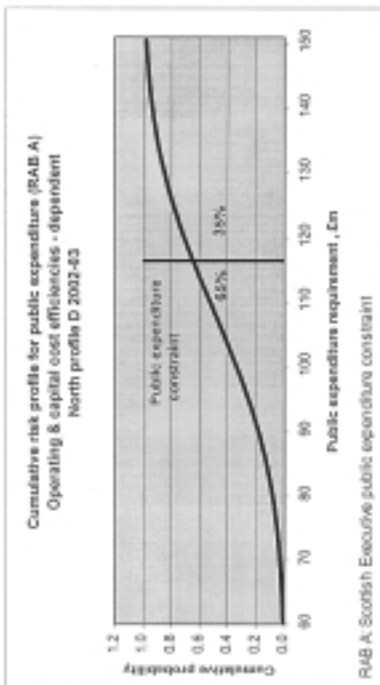
Public expenditure constraint: Commissioning letter



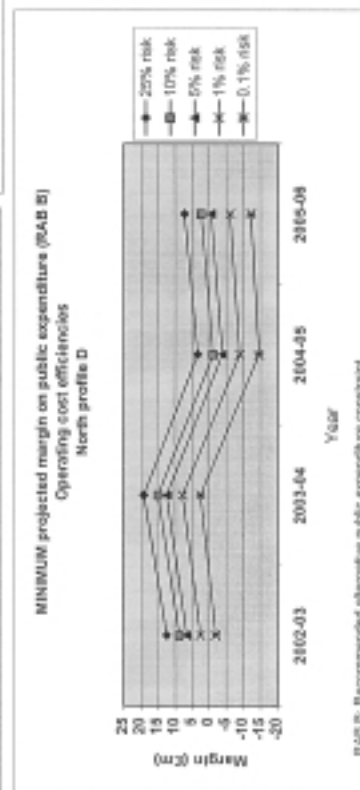
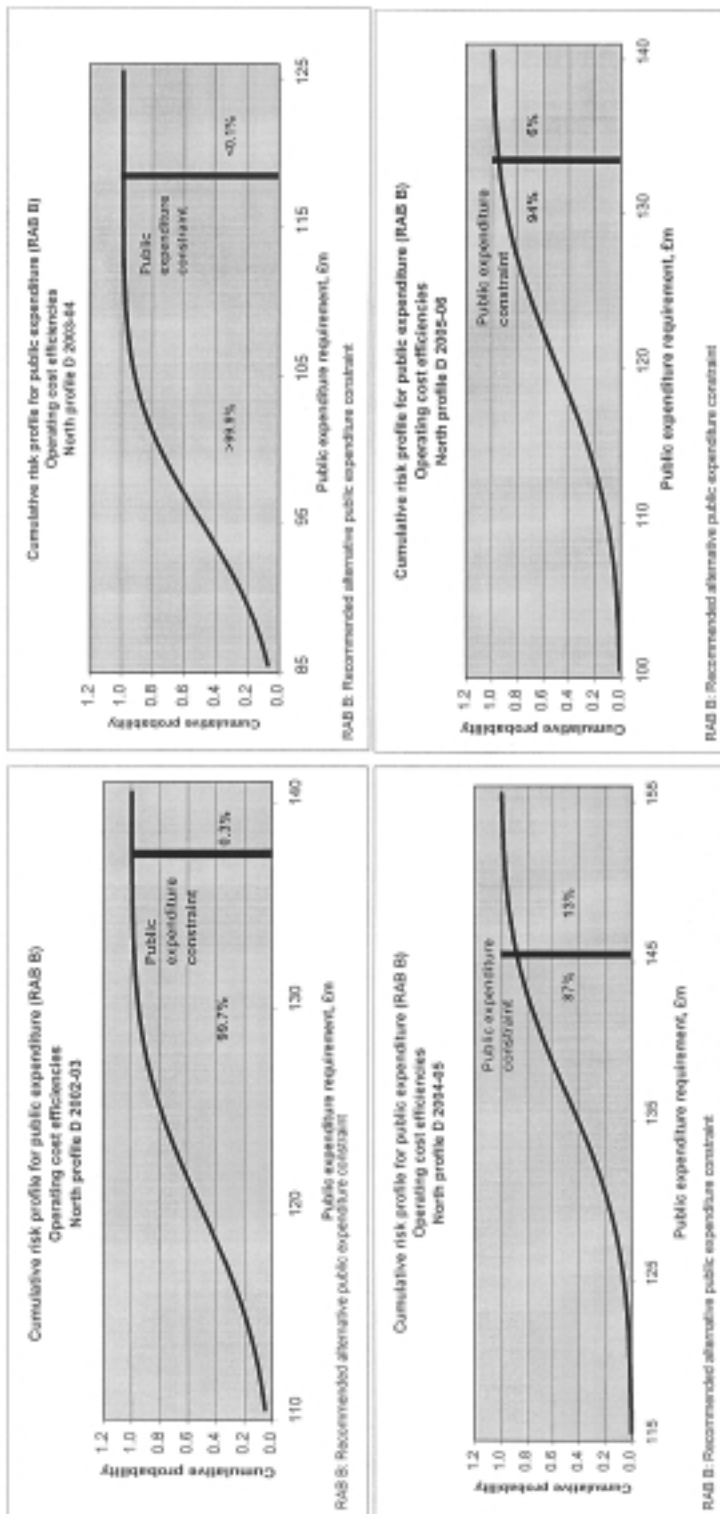
D4 North of Scotland

Operating & capital cost efficiencies profile D

Public expenditure constraint: Commissioning letter

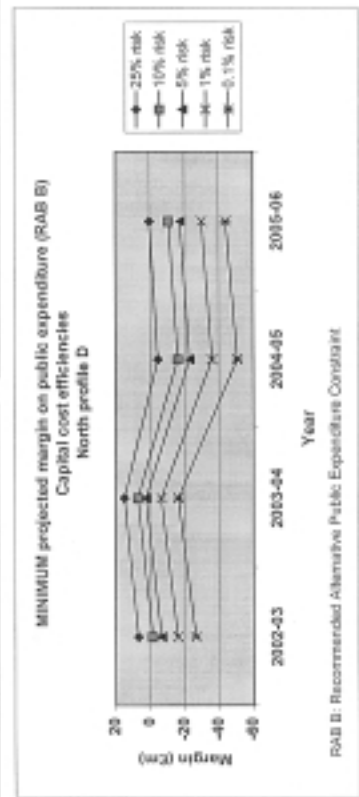
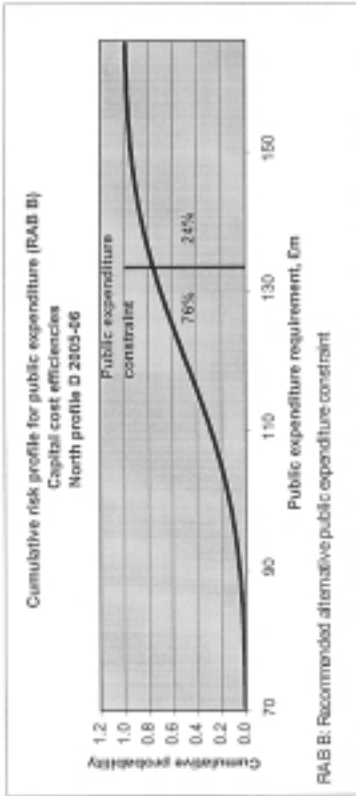
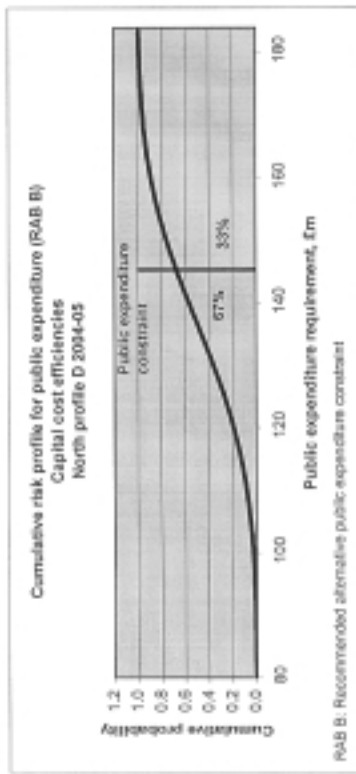
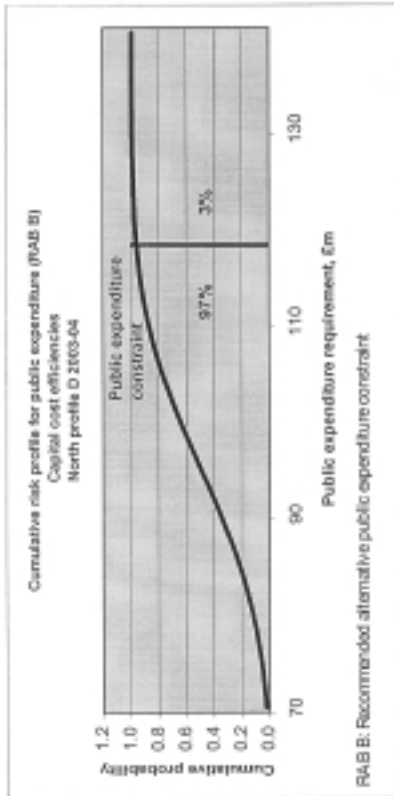
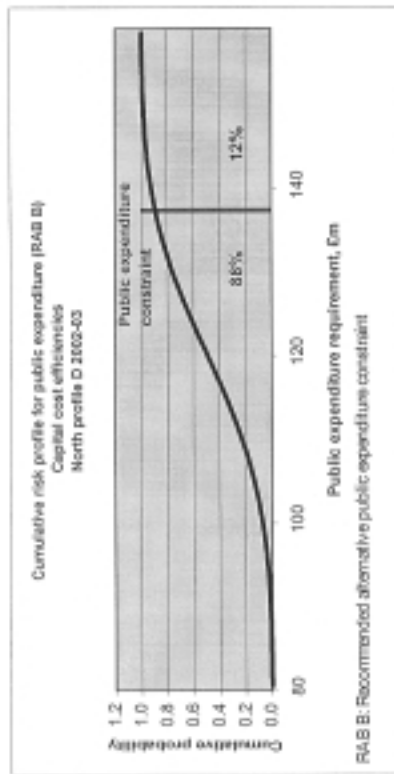


D5 North of Scotland Operating cost efficiencies profile D Public expenditure constraint: Recommended alternative

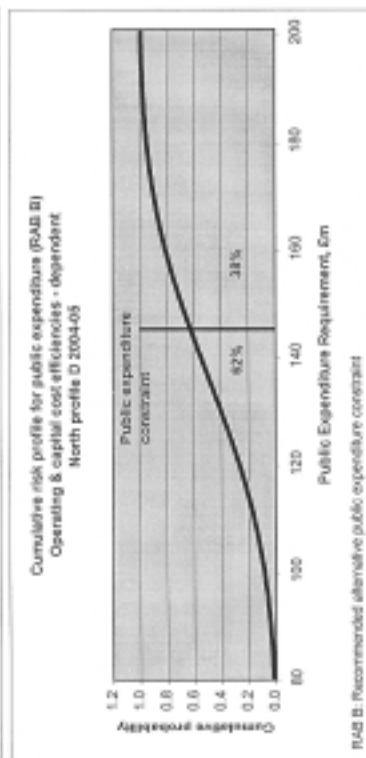
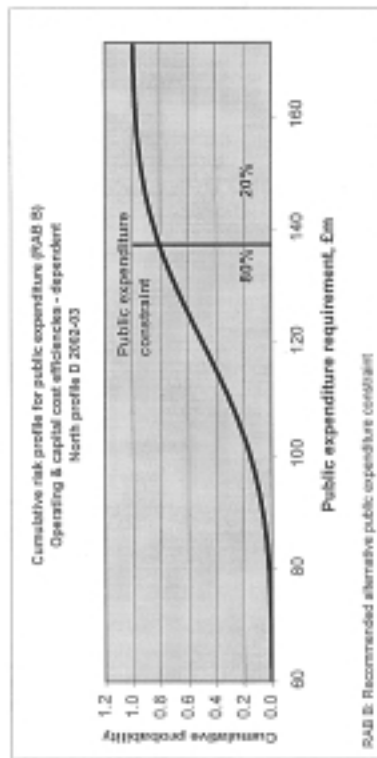


D5 North of Scotland Capital cost efficiencies profile D

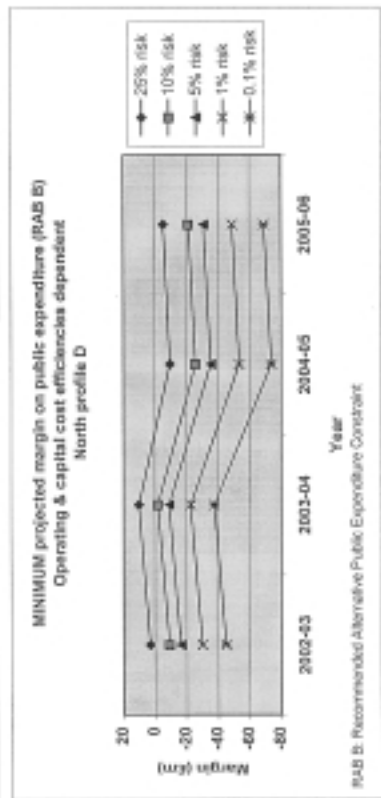
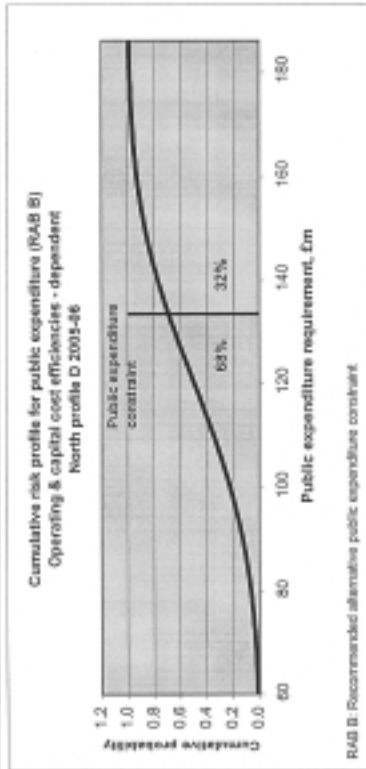
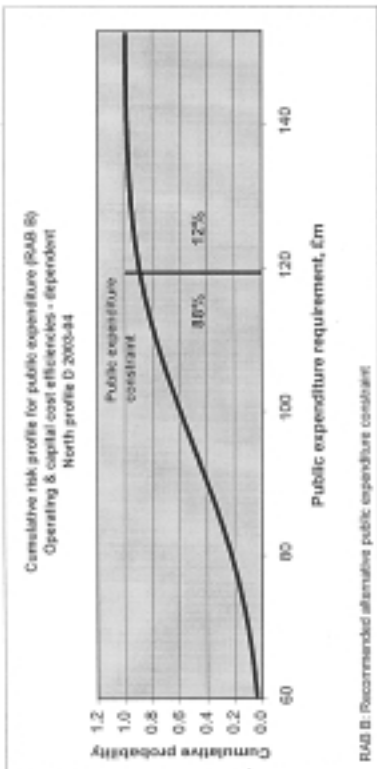
Public expenditure constraint: Recommended alternative

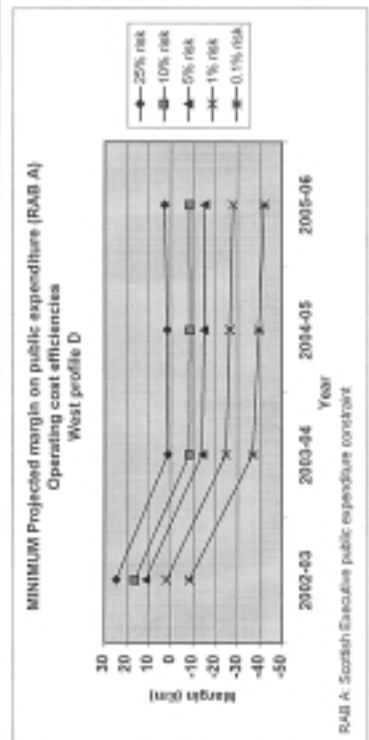
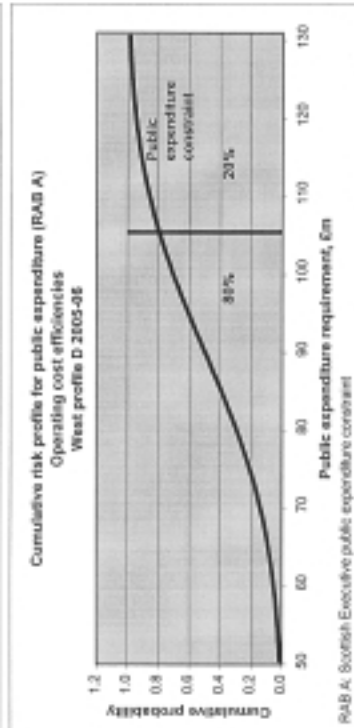
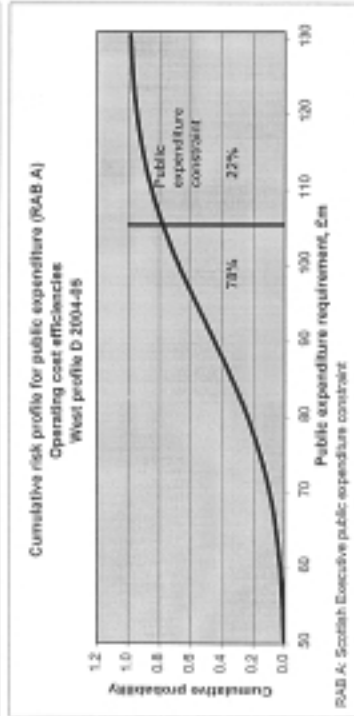
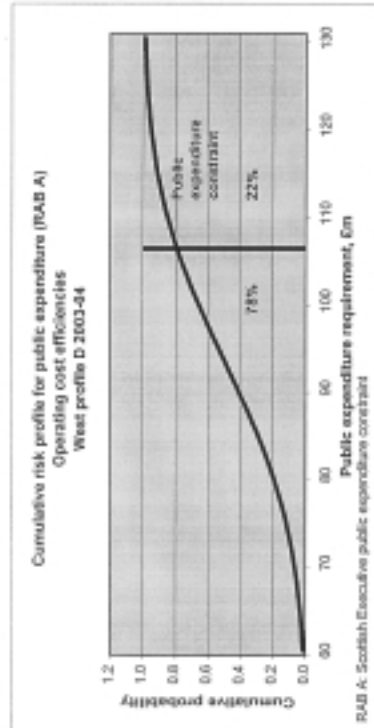
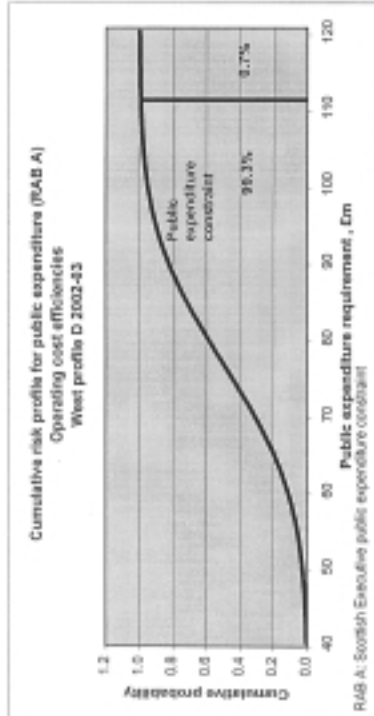


D5 North of Scotland Operating & capital cost efficiencies profile D



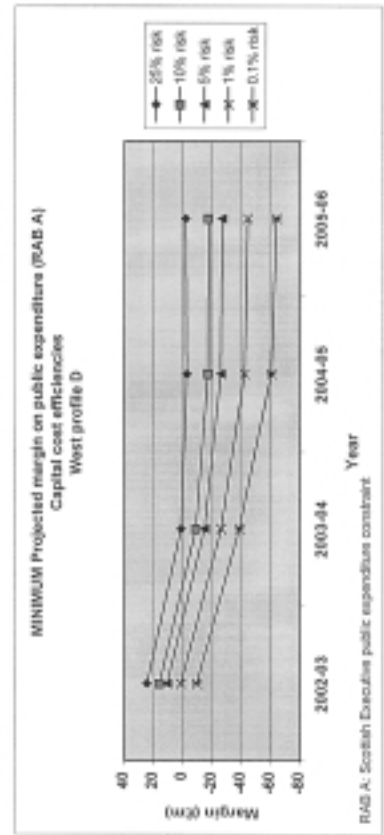
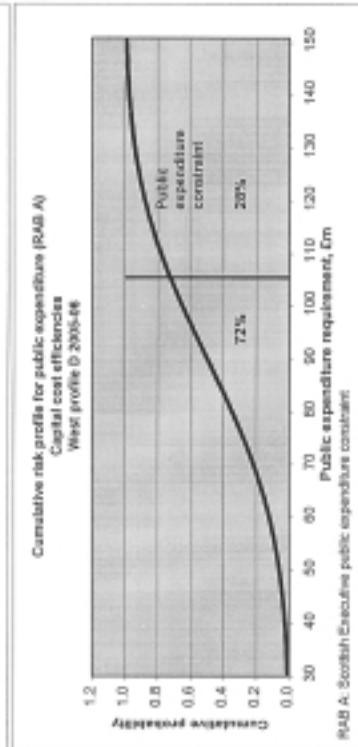
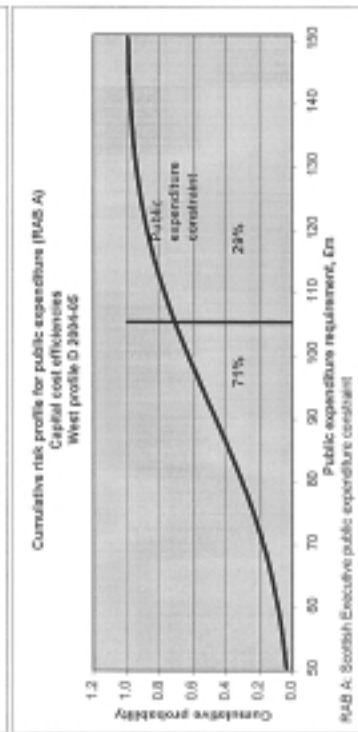
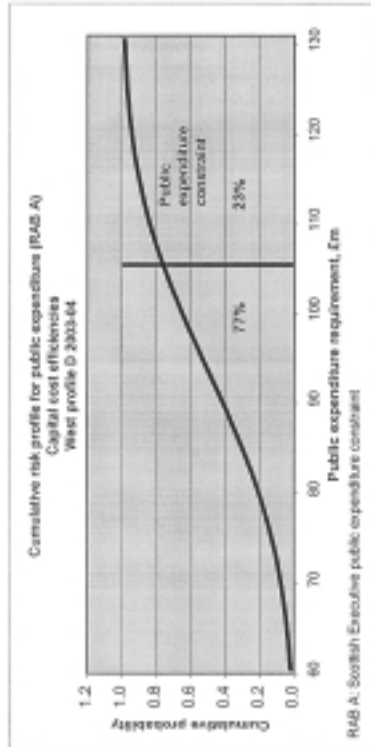
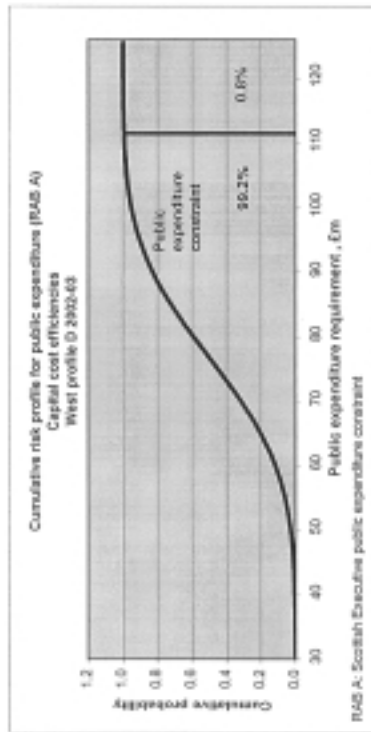
Public expenditure constraint: Recommended alternative





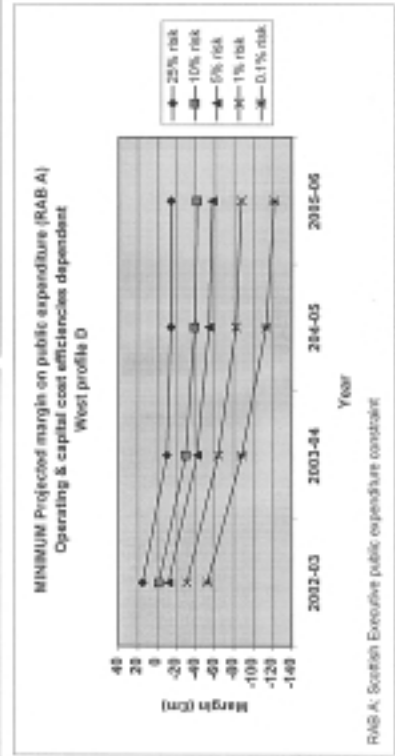
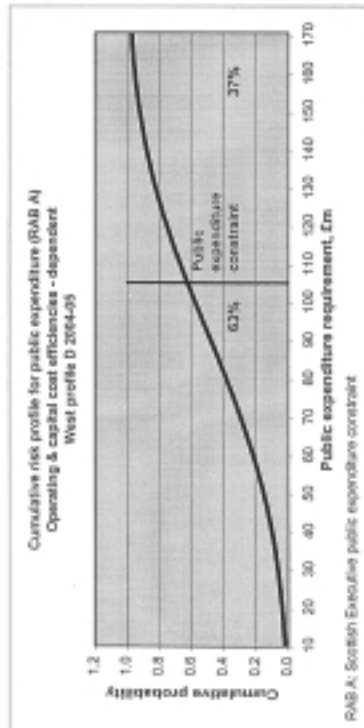
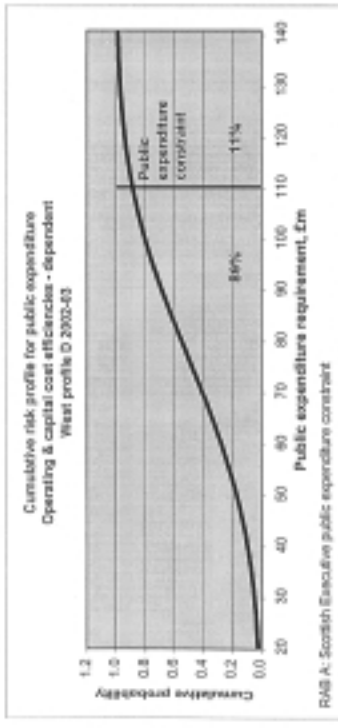
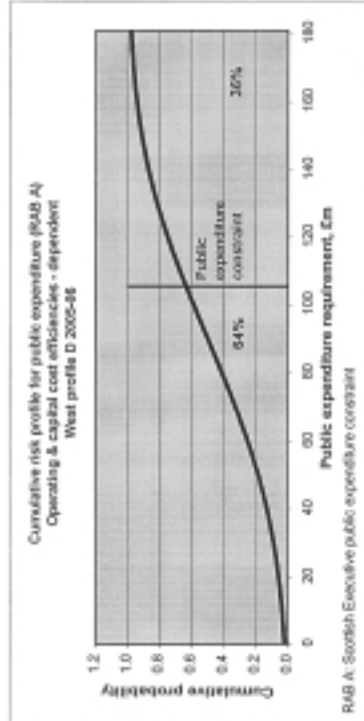
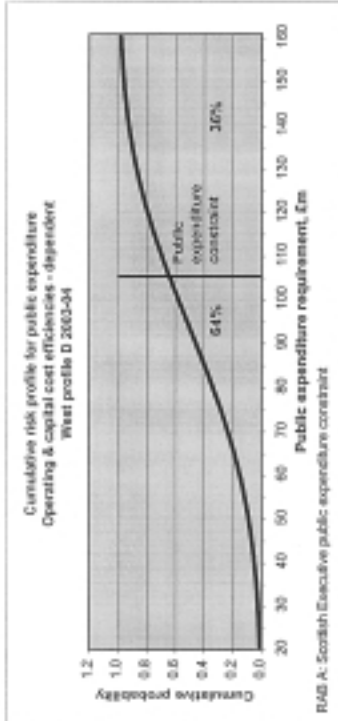
D6 West of Scotland Capital cost efficiencies - profile D

Public expenditure constraint: Commissioning letter

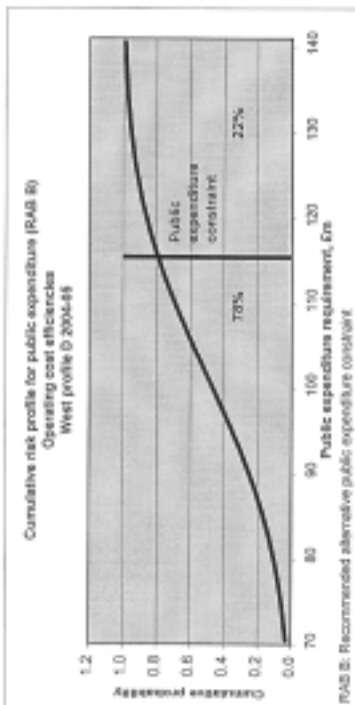
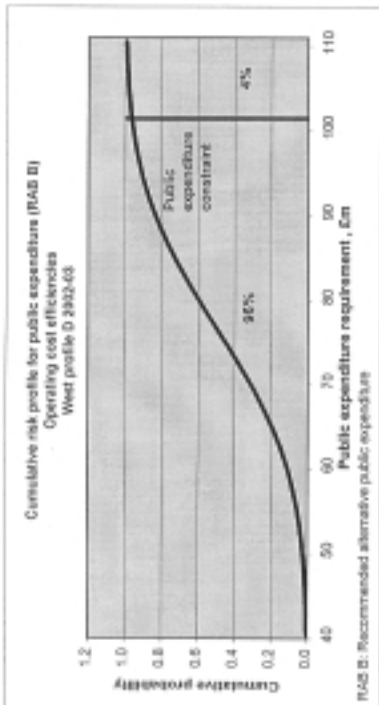


D6 West of Scotland Operating & capital cost efficiencies - dependent - profile D

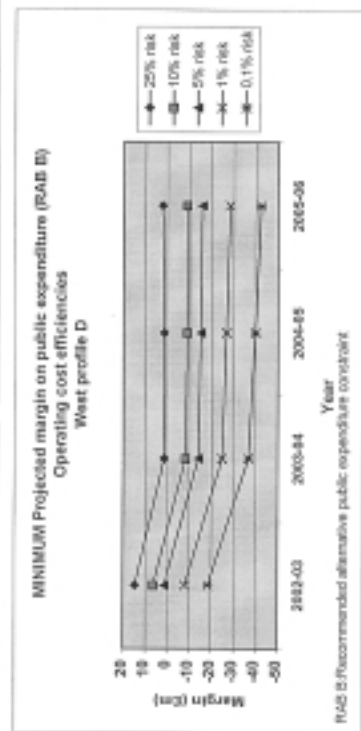
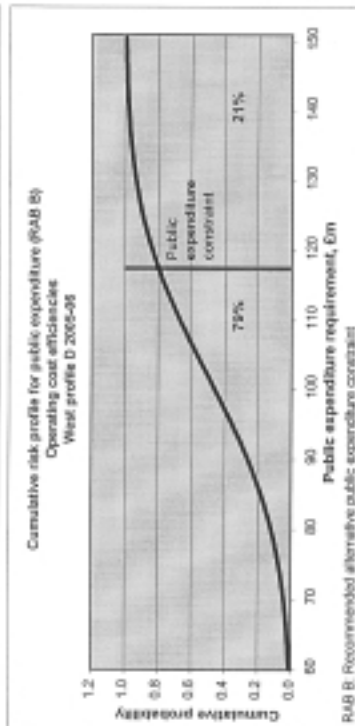
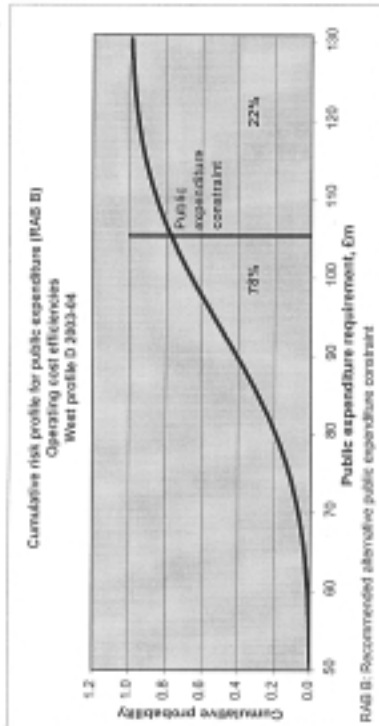
Public expenditure constraint: Commissioning letter



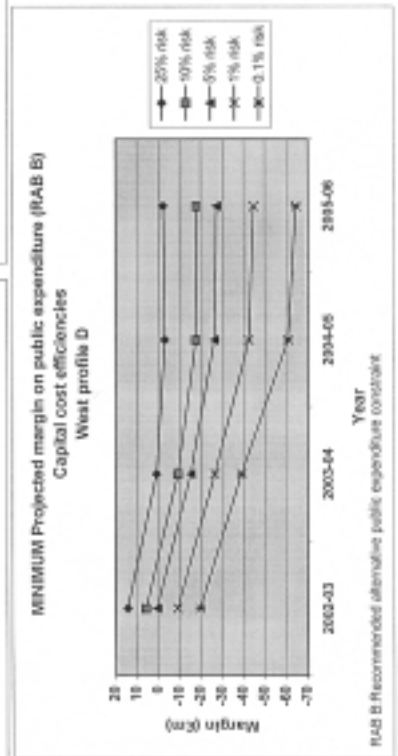
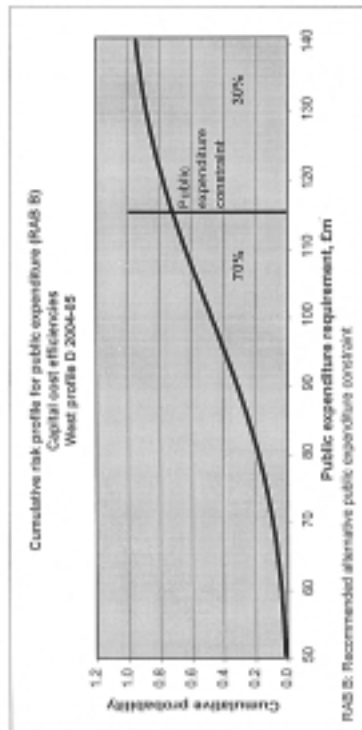
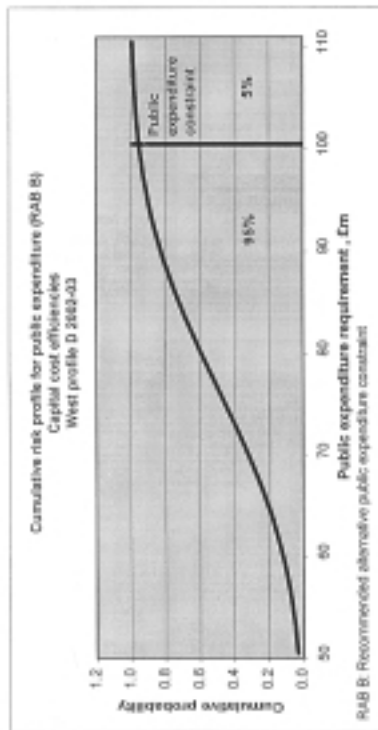
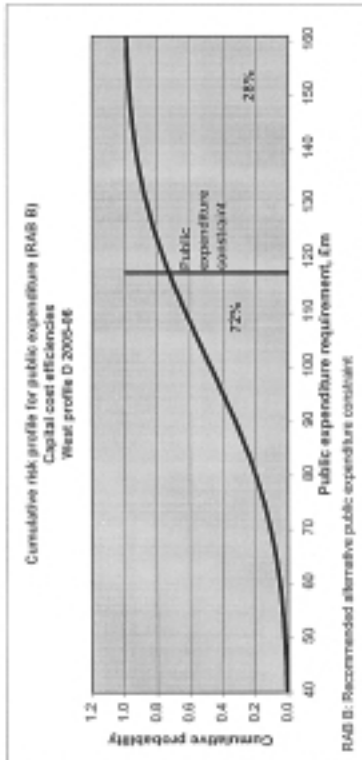
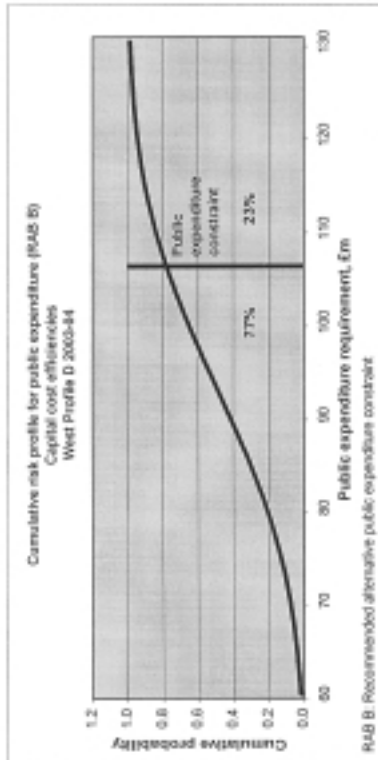
D7 West of Scotland Operating cost efficiencies - profile D



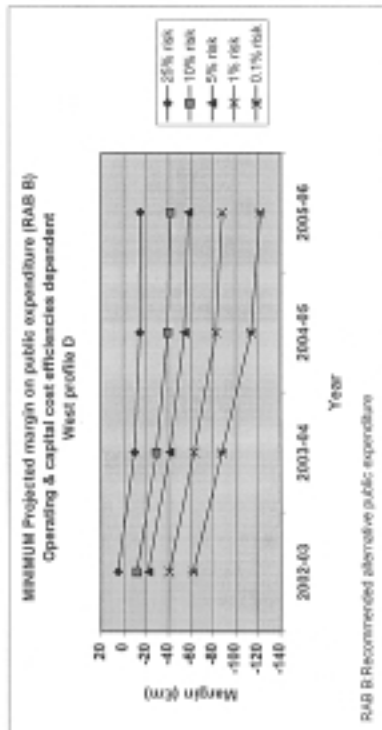
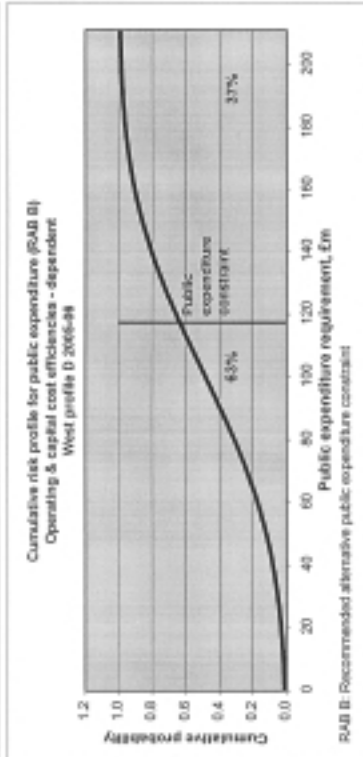
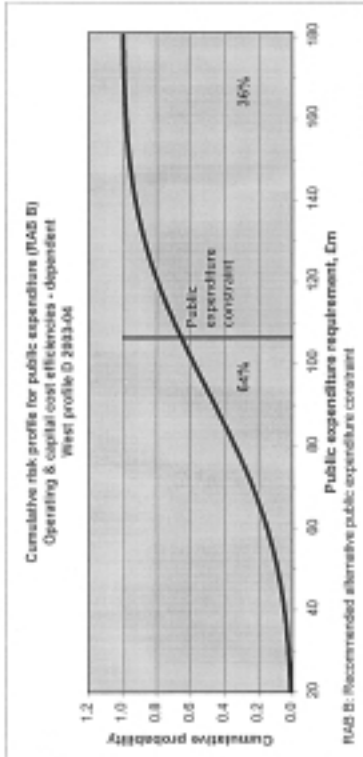
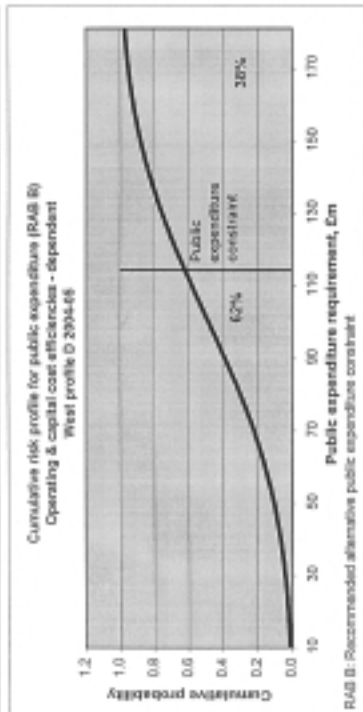
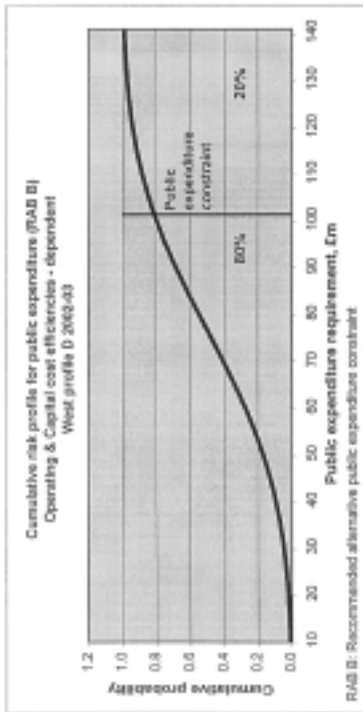
Public expenditure constraint: Recommended alternative



D7 West of Scotland Capital cost efficiencies - profile D Public expenditure constraint: Recommended alternative



D7 West of Scotland Operating & capital cost efficiencies dependent - profile D



Public expenditure constraint: Recommended alternative

Section 9: Appendix E

Consultation with Domestic and Non-domestic Customers

DOMESTIC CUSTOMERS

a) The Water Panel

i) Background

The Panel is made up of 2,250 customers of the three Scottish water authorities (750 from each water authority area).

It was established by T L Dempster Strategy and Research during Autumn 2000 on my behalf. They initially issued 45,000 invitations sourced from UK-Info Disk 2000 (a CD Rom of the UK electoral roll, cross referenced to the phone directory). Certain groupings that were under-represented in the responses to these invitations were then targeted using face-to-face interviews.

ii) First survey of the Water Panel

During October and November 2000 an eight-page questionnaire was sent to all Panel members and 1,530 valid questionnaires were received in time for processing (in the absence of any incentives, a response rate of 68% is a high figure).

Key findings

Some of the key findings from the survey included¹

- a very limited awareness of the legal status of water authorities (35% awareness) and, in particular, a public belief that they are subsidised by Councils (44%) and/or the Scottish Parliament (33%);
- generally positive satisfaction ratings with regard to the key aspects of quality of drinking water (73% rate smell as 'good' or better, up to 93% for reliability of supply);
- some concerns about the quality of customer care when individuals have had to contact their water authority (for example, only 50% thought the water authority was 'good' or 'very good' at keeping them informed; 21% were dissatisfied with the outcome of their contact);
- the following issues are perceived to be major problems: sewage pollution (83%), leaking water pipes (52%), external flooding from sewers (38%) and smell around sewage treatment works (37%);

- 50% of people claim to know the value of their water bill although many of these underestimate the correct figure;
- across Council Tax Bands, a broadly equal number of people perceive their water and sewerage bill to be fair (48% in Council Tax Band A or B, 49% in Council Tax Band C, D or E and 49% in Council Tax Band F, G and H);
- 44% of respondents expect water bills to rise by inflation or below this level, 19% expect rises of quite a bit more than inflation;
- more people think that the water and sewerage infrastructure is in good condition than think it is in poor condition (43%, compared with 33%);
- the main areas for which people would be willing to see bills rise are improved sewage treatment (86%), reduced risk of flooding from sewers (61%), and improved tap water quality (54%);
- most people perceive it is better to improve services than to reduce bills (84%, compared with 16%).

iii) Focus groups

Following the first survey, T L Dempster recommended more detailed consultation on a number of issues. During January and February 2001, a programme of nine focus groups (three in each water authority area) took place to address the following issues:

- awareness and understanding of water authorities;
- pricing and investment policy;
- customer service issues.

The key findings relating to each of these issues are set out below².

Awareness and understanding of water authorities

- For most people, water and sewerage issues only become important if "something goes wrong". For this reason, little proactive interest is taken which leads to a low level of understanding of the role and status of the water authorities.
- A number of factors foster a sense of confusion regarding the role and status of the water authorities:

¹ Extract from T L Dempster The Water Panel Final Report on Second Survey Findings May 2001, Executive Summary. Copies of the full report are available from this office.

² Extract from T L Dempster The Water Panel Final Report on Focus Group Research February 2001, Executive Summary. Copies of the full report are available from this office.

- billing via Council Tax bills automatically makes the link with local authorities;
- national 'blanket' news coverage of water companies does not draw a distinction between the privatised industry in England and Wales and the situation in Scotland;
- the delineation of responsibilities whereby the authorities are responsible 'to the front gate' is not understood by many;
- When people hold positive impressions of the state of the water and sewerage infrastructure it is based commonly on their own experiences of:
 - the infrastructure that they see – "dams in a nice environment";
 - the output – "what comes out of a tap";

Poor impressions are also formed from specific experiences that tend to make a strong impression on people, such as seeing the state of pipes when they are dug up in the streets, or seeing sewage on beaches. Wider educational/public relations input on the state of the infrastructure has had a limited impact to date.

- Awareness of pricing levels is low because of the monopolistic position of the water authorities. As people "have to pay it" and do not have a choice of suppliers, it is not seen as an important issue by most people.
- Water is viewed differently from other utilities because of its elemental nature – "a gift of God". Many people perceive that gas and electricity have to go through a process of conversion, but do not see this as analogous to the process of water supply.
- The water authorities are seen as "the silent man of the utilities" (although awareness is better in the North of Scotland Water Authority area). People perceive that awareness and understanding must improve for the following reasons:
 - to raise accountability – "you don't see their promises in black and white";
 - to undertake an education role;
 - to foster good customer service.

Respondents currently feel that they have little basis on which to judge efficiency. There is *some* perception of a lack of efficiency, which is clouded by the authorities being perceived to be related in some way to the local authorities. There is a belief that the authorities act in favour of the public good, but at the same time a fear that this may be eroded in the future.

- The key word that people would like to associate with the water authorities is 'confidence'. They want to have clean tap water and to have the job of sewage disposal carried out efficiently and without them having to know about it. They wish to have confidence that the water authorities will achieve this in such a way that the issue is of no concern to the consumer.
- There are major concerns about 'creeping privatisation'. Such concerns arose unbidden in a number of groups. The difficulties caused by fragmentation of the railways have further strengthened fears over standards of private operators.
- The areas that focus group participants perceived to be core included:
 - quality control;
 - collection, supply and disposal;
 - communications with the public;
 - billing and customer service;
 - generally, areas where it is perceived the authorities have specific expertise.

There is a latent scepticism about any form of subcontracting, although when prompted the majority perceive that there are situations where external parties need to be involved for reasons of expertise or economies of scale (e.g. market research or major construction projects). This scepticism can be intense (particularly for customers of the West of Scotland Water Authority) and is founded on underlying emotions rather than rational analysis.

Pricing and investment policy

- The overall impression is that water authorities generally provide good value for money. This is conditioned by the positive view of water quality, a perception which is enhanced as people travel more frequently and are able to compare the Scottish experience with water services that may be inferior abroad.
- We have noted above the importance of consumer confidence in water and other utilities. A related factor is reliability – "like the referee in a football match, you don't want to know the water authority is there" (unless, of course, something goes wrong).
- These issues relate to the outputs of the process rather than the efficiency of that process itself. People do not tend to benchmark water authority performance against that of

other utilities for a variety of reasons, including the distinctiveness of the process and ownership structures. The desired benchmarks are “each other and the water companies in England”. Most people do not believe that they have sufficient information on which to make a truly informed judgement about value for money.

- In relation to charging structures, there is general acceptance that charges should be related to ability to pay, but disagreements as to how precisely this should be done. Again, awareness of the current situation is limited. Since bills are linked to Council Tax Bands, there is a certain presumption that the level of water charges will relate to Council Tax Band increases, which is not necessarily the case. Concerns are also expressed for anomalous situations – “the old lady living on her own”.
- Opinions are divided as to whether and how usage should be reflected in a charging structure. Two distinct groupings become apparent:
 - those who have a more general commitment to environmental issues, who tend to see water as a precious, finite resource;
 - those who perceive the supply to be more or less infinite – “you are paying for the availability rather than the substance itself”.

Most people consider that before metering is considered there should be more investment in education and in promoting the use of water efficient appliances.

- Other than referring to specific local issues, the investment priorities identified by group participants did not vary significantly from those already identified. A key driver of people's attitudes to these issues is their own health and that of their families.

- Sewage treatment to improve rivers and bathing waters is perceived to be a priority more because of the intensity rather than the frequency of the experience – “You don't forget an experience like that”.
- Tap water quality is rated highly as an investment priority, but in a relatively superficial sense – it is a “good thing”. Likewise, the desire to reduce the risk of flooding from sewers is confused in people's minds with recent problems of surface water flooding.
- Focus group participants were asked to ‘spend’ a £10 million budget on a range of investment priorities. The results of this are detailed in the table below.

This is broadly reflective of the first survey findings. We asked this question again during the second survey to provide further information on the weight which various customer groups attach to key investment priorities.

- A recurring theme in relation to pricing was that people would be willing to pay modest increases if:
 - they were convinced that the water authorities were operating efficiently;
 - they saw the benefits of the investment.

This last point is particularly important. Group members perceive that it is easier to justify price increases on the basis of additional benefits, rather than on the promise of maintaining standards. People are conditioned to expect extra benefits for extra charges.

- People also wish to see any increases phased in over time, with an expectation that annual increases should be at the same level of inflation or “slightly above”.

Responses to the question: >

“If you had £10 million to invest in water and sewerage, what would you invest it in?”

Better sewage treatment to improve the cleanliness of our rivers/sea bathing areas	£88m
Improving the quality of tap water	£40.5m
Reducing the risk of flooding from sewers	£37.5m
Reducing the risk of water supply interruptions	£27m
Reducing bills or minimising any increase in bills	£20.5m
Ensuring adequate water pressure	£17m
Improved customer service and care (e.g. ease of contact, speed of reply, staff courtesy, staff knowledge etc.)	£7m
Installing meters	£7m

N.B. Numbers do not round to a multiple of £10m due to incomplete responses.

Customer service issues

- The focus groups considered three modes of contact between the water authorities and customers: telephone, written/e-mail and personal visits. However, these are not usually alternatives. Rather, they sometimes occur in sequence and the form of contact is usually related to the seriousness of the issue (i.e. telephone for routine contact up to personal visits for more serious issues). There are indications that letters are considered to be more tangible than e-mails.
- Prior to any form of contact, people believe that clear and accessible information about who to contact for particular issues should be provided. A defined service standard should be set out for this theme.
- Key expectations in terms of telephone contact are that:
 - the telephone should be answered after between three and five rings;
 - respondents expressed a preference for direct lines to relevant departments;
 - call-handlers should be courteous;
 - routine issues should be resolved within 10 minutes or so;
 - staff should be able to direct callers to an appropriate member of staff;
 - respondents expressed a strong preference for human contact rather than automated response systems.
- It is recognised, reluctantly, that automated response systems may have benefits in terms of efficiency. When such systems are implemented, people have specific expectations:
 - that they will not be kept on hold for a long time (this needs to be quantified);
 - that a *reliable* call back facility will be made available.
- When people write to the water authority, their main expectations are:
 - an automatic acknowledgement by return;
 - the above to include details of
 - who will be dealing with the issue,
 - an estimate of when the issue will be resolved;
 - that they should have confidence that their enquiry will be dealt with at an appropriate level;
 - that written communication should be in plain English;
 - that information about a Complaints Procedure should

be provided, without customers having to ask for it.

- On the rare occasions when personal visits are required, the key expectations are that:
 - the venue should be appropriate in terms of
 - accessibility,
 - comfort;
 - there should be written confirmation of pre-arranged appointments;
 - signage should be visible;
 - buildings should be accessible to all;
 - the meeting should be attended by the appropriate person to resolve the issue;
 - that person should be punctual;
 - clearly visible name badges should be worn.
- There are more general expectations in terms of service standards that apply to all customer service experiences:
 - when an issue cannot be resolved, a clear explanation should be given as to the reasons for non-resolution;
 - when a promise is made it should be kept.
- Finally, people have expectations that relate to customer service issues associated with operational matters:
 - they should be given prompt notice of supply interruptions (again, needs to be quantified);
 - *proactive* efforts should be made to ensure that people's needs are met (e.g. supply of bottled water) in the case of supply interruptions;
 - emergency situations should be dealt with immediately.

iv) Second survey of the Water Panel

The second survey of the Panel was conducted by post during March and April 2001. A questionnaire was sent to all Panel members and 1,431 valid questionnaires were received in time for processing. This is equivalent to a response rate of 64%.

Key findings

Some of the key findings from the survey included:³

- Indications of growing awareness of the water authorities as public bodies responsible to the Scottish Executive (43% of respondents to the second survey, compared with 35% of respondents to the first survey).
- Indications of growing awareness that the water authorities are funded through bills only (28%, compared with 16% in the first survey). However, 72% of respondents continue to

³ Extract from T L Dempster The Water Panel Final Report on Second Survey Findings May 2001, Executive Summary. Copies of the full report are available from this office.

believe that the authorities receive a subsidy from some source.

- 14% of individuals who have contacted the local water authority in the past year have experienced some difficulties in getting in touch. This has primarily been related to telephone access.
- A small majority (56%) believe that it is important that the water authority has an office in their local area. However, the real level of priority placed upon the provision of such a facility remains unclear.
- Overall awareness of the Guaranteed Minimum Standards is 44%, 98% of people believe that it is important that such standards are set.
- There is little difference in perceptions of service attributes between the water authorities and other utilities.
- The actual figures for those who rate the water authorities as “about the same” as other utilities for these service attributes vary between 53.1% and 62.4%.
- 57% of respondents believe that competition in other utilities has brought benefits to them. The most common benefits are lower bills (85%) and more choice (51%).
- A smaller number (28%) believe that some factors have worsened as a result of the introduction of competition in other utilities. The main area of concern is poorer customer service (54%).
- A significant proportion of people believe that the introduction of competition in other utilities has enhanced value for money (a total of 50% of people believe this, compared with 6% who believe that competition has resulted in better value for money).
- 27% of people state that they would like to have a choice of supplier for water and sewerage services. A slightly higher proportion (29%) state that they would consider switching suppliers if a choice was available. Only 39% answered this question negatively, with a high proportion of “don’t know” responses (32%). This suggests that around 61% of customers could be potential switchers.
- The key factor that would encourage switching is a lower bill (74%). A substantial minority (36%) would be willing to switch for a figure of £50 or less.
- The majority of people believe that it is important that the water authorities continue to provide services for business customers (64% believe it is very important and 19% believe it is quite important). Most of the remainder were “neither/nor” or “don’t know” responses.
- The most apparent demand for additional services to be provided by the water authorities is domestic plumbing services (56%).
- An increasing proportion of people perceive that their charges are unfair (31%), compared with 20% in the first survey.
- There is only a modest demand (24%) for water and sewerage charges to be billed separately from the Council Tax.
- The preferred payment method for the great majority of people is monthly, by Direct Debit. In practice, this option is currently open to the great majority of people.
- Respondents’ preferred measures to encourage bill payment are “allowing people to spread out payments” and “allowing a variety of payment methods”. There is considerable support for the provision of debt counselling (58%).
- The only area where measures to provide discounts received majority support was for pensioners. 33% of people believe that such discounts should be provided through charities.
- A significant minority (31%) perceive that there should not be progressiveness in water and sewerage charges. However, a larger proportion accepts that the Council Tax Band system is a fair way in principle of charging for the service provided. A significant minority also believe that those in higher Council Tax Bands should pay more than they are paying at present.
- Compared to the first survey, a greater proportion of respondents (41%, compared with 32%) now perceive the water and sewerage infrastructure in Scotland to be in poor condition.
- There has been a significant increase in the number of people who would support price increases of “quite a bit more than inflation” to fund work on the infrastructure (26%, compared with 23% in the first survey).
- Key investment priorities continue to be better sewage treatment, reducing the risk of flooding from sewers and improving the quality of tap water. Analysis suggests that if a hypothetical £10 million budget were made available, then the typical consumer would like to see this shared out in a ratio of 9 to 1 of investment compared to minimising any increase in bills.
- There is some support for a single water authority, with 40% of people perceiving that this would be a good thing,

compared with the 37% who perceived it to be a bad thing. The principal reason behind support for a single authority is a sense of fairness in that "charges should be the same across Scotland".

b) The Domestic Forum

i) Background

I commissioned Esther Robertson, to identify a broad range of organisations which represent and/or work with individuals and families on low or fixed incomes and who would be interested in working with me on the issue of the affordability of water charges for their client groups.

In May and June 2001 two meetings took place with those organisations which had indicated a willingness to engage in the process, namely:

Child Poverty Action Group
 Citizens Advice Scotland
 Communities Against Poverty (CAP) Network
 CoSLA
 Dundee Anti Poverty Forum
 FLOW Tayside
 Highland Advice and Information Network (HAIN)
 Lothian Anti Poverty Alliance
 Scottish Consumer Council
 Scottish Council of Voluntary Organisations (SCVO)
 Scottish Local Government Forum Against Poverty
 The Poverty Alliance

Professor John Sawkins of Heriot Watt University, who has conducted considerable research into the subject of affordability, also attended.

At these meetings the current and likely future requirements of the industry and the potential impact on charges were outlined. The views of the group as to the best approach to the longer term affordability issue were then sought.

ii) Key findings

There was broad agreement within the group about the basic principles upon which any long term affordability scheme should be based. These were that any new scheme:

- must be sustainable in the long term;
- must be targeted and linked to ability to pay;
- must be fair, simple and transparent (simple to claim and simple to administer);
- should ideally be applied by Councils on the basis of eligibility for Council Tax rebate.

The group shared a strong belief that an improved affordability scheme has a crucial role to play in minimising the impact of increases in water charges on those least able to pay. The group has urged me to conduct further research into the affordability of water charges.

c) Consultative Committees

i) Background

The 1999 Water Industry Act established a Consultative Committee for each of the three water authority areas. The role of these Committees is to advise the Water Industry Commissioner for Scotland on the promotion of the interests of customers of the three water authorities.

Each Committee has between six and nine members. Selection of members follows procedures, approved by Scottish Ministers, in line with the principles governing public appointments laid down by the Commissioner for Public Appointments.

Consultative Committee members are unpaid but are eligible to claim out of pocket expenses for items such as travel, childcare and loss of earnings. Members work a minimum of one day per month on their duties as members.

East Committee

Name	Location	Occupation
Michael Allan	Edinburgh	Director of an Environmental Company
Frank Crawford ⁴	Grangemouth	Retired Production Co-ordinator in the Chemical Industry
Graham Davies	Livingston	Warehouse Clerk
Robert Mitchell	Kippen, Stirlingshire	Career in Heavy Engineering
Neil Munro	Anstruther	Quantity Surveyor
Denton Udall	Dunfermline	Army Lt Col, Ex-Scottish Office and Private Sector
Claire Wells	Uphall, W. Lothian	IT Specialist

North Committee

Name	Location	Occupation
Stephen Cribb	Beaully	Hydrologist
Anselm De Silva	Aberdeen	Local Government Librarian
James Green	Fort William	Cinema Projectionist
Michael Halley	Munlochy, Ross-Shire	Fire Safety Expert
Norman Shearer	Orkney	Self-Employed Tourism and Leisure Consultant
Dianne Stout	Brechin	Proprietor of Riding Stables and Boarding Kennels
Stephanie Tobyn ⁵	Auchterarder	Strategy Manager: Energy Supplier

West Committee

Name	Location	Occupation
James Blane	Saltcoats	Retired, Self Employed Management Consultant
Michaela Clelland	Wishaw	Psychiatric Staff Nurse
Gilbert Holliday	Southwick, Dumfries	Retired Public Relations and Marketing Consultant
Valerie Kennedy	Dunoon, Argyll	Housewife and Auxiliary Nurse
John Mitchell	Saltcoats	Retired Assistant Head Teacher
Peter Shill	Glasgow	Tourism Management
Mary Wood ⁶	Ayr	Resource Worker for the Richmond Fellowship, former Prison Governor

⁴ Deputy Chairman⁵ Deputy Chairman⁶ Deputy Chairman

ii) Consultative Committee Meetings

East of Scotland Consultative Committee Public Meetings

Location	Date	Number of Invites	Number of Posters	Advert Placed	Number of News Releases Issued	Attendance	Total cost
St Monans	10/8/00	42	-	East Fife Mail	1	8	£106
Peebles	27/9/00	20	11	Peebleshire News	1	4	£114
North Berwick	2/11/00	28	11	East Lothian Courier	1	10	£113
Coldstream	12/12/00	10	10	Berwick Advertiser	1	4	£111
Bo'ness	8/2/01	16	45	Bo'ness Journal	1	4	£107
Kirkcaldy	1/5/01	39	103	Fife Free Press	1	5	£116
Denny	15/5/01	17	50	Falkirk Herald	2	2	£107
Tyndrum	7/6/01	10	20	-	1	12	£18
Musselburgh	12/7/01	19	54	Musselburgh News	2	0	£80
Bathgate	14/8/01	36	109	West Lothian Courier	3	4	£152
Edinburgh	4/9/01	42 plus flyers to 400 voluntary groups	85	Edinburgh Evening News	5	13	£619
Total		679	498		19	66	£1643

Invitations to these meetings were issued to:

Addiewell & Loganlea Community Council

Advocacy into Action

Age Concern St Andrews

Armadale Community Council

Athelstaneford SWRI

Auchmuty Tenants & Residents Association

Auchtertool Community Council

Avonbridge & Standburn Community Council

Balerno Community Council

Balquhidder Community Council

Banknock, Haggs & Longcroft Community Council

Bathgate Community Council

Bathgate Social Work Centre

Bellsquarry Community Council

Berwickshire Housing Association

Blackburn Community Council

Blackness Area Community Council

Blackridge Community Council

Bo'ness Community Council

Bo'ness Development Trust

Bonnyrigg and Lasswade Community Council

Borders Talking Newspaper

Bridgend Community Council

Brightons Community Council

Broxburn Community Council

Burntisland Community Council

Callander Community Council

Camelon, Tamfourhill & Bantaskine Community Council

Cardenden & Kinglassie Community Council

Carers of East Lothian

Carnbee and Arncroach Community Council

Carnbee Church Hall

Carron & Carronshore Community Council

Caskieberran Residents Association

Central Scotland Chambers of Commerce

Choices Community Care Services Ltd

Citizens Advice & Rights Fife

Citizens Advice Bureaux

Grahamston Community Council

Coldstream & District Community Council

Colinsburgh and Kilconquhar Community Council	Federation of Small Businesses
Colinsburgh Town Hall	Federation of Tenants & Residents Associations
Collessie Community Council	Fife Council Homecheck
Cook Street/Stewart Street Residents Association	Fife Council Members
Corstorphine Community Council	Fife Independent Disability Forum
Cosmos Community Centre	Fife Independent Disability Network
Craigentiny Community Council	Firhill Community Council
Craiglockhart Community Council	Forth Valley Businesses Service Network
Craigmillar Community Council	Freuchie Community Council
Craigrothie Village Hall	Gallatown West Tenants & Residents Association
Crail and District Community Council	Garvald & Morham Community Council
Crail Town Hall Management Committee	Gavinton, Fogo & Polworth Community Council
Creich and Flisk Community Council	Gifford Community Council
Crianlarich Angling Association	Glenrothes Area Residents Federation
Currie Community Council	Glenrothes Residents Federation
Dalkeith Community Council	Gorebridge Community Centre
Danderhall and District Community Council	Gorgie/Dalry Community Council
Dechmont Community Council	Grangemouth Community Council
Dedridge Community Council	Grangemouth Community Resource Centre
Denny & Dunipace Community Council	Grangemouth Old Peoples Welfare
DIAL Falkirk	Greenhill Community Resource Centre
Drumbrae Community Council	Greenlaw & Hume Community Council
Drylaw/Telford Community Council	Greenrigg Community Council
Dunbar Community Council	Gullane Area Community Council
Dunnikier Community Council	Haddington & Area Community Council
Dunpender Community Council	Halffields Area Residents Association
Duns Community Council	Hallglen & Glen Village Community Council
East Calder & Wilkieston Community Council	Hayfield Community Residents Association
East Lammermuir Community Council	Home Start North East Fife
East Lothian Care and Repair	Howden Community Council
East Lothian Council Members	Humbie, East & West Saltoun & Bolton Community Council
East Lothian Voluntary Organisations Network	Hutchison/Chesser Community Council
East Neuk Community Centre	Independent Special Education Advice, Scotland
East Neuk Community Trust	Killin Community Council
East Wemyss and McDuff Community Council	Kingdom of Fife Tourist Board
Edinburgh Chamber of Commerce	Kinghorn Community Council
Edinburgh City Council Members	Kingsbarns Community Council
Edrom, Allanton & Whitsome Community Council	Kingston/North Berwick SWRI
Elie and The Royal Burgh of Earlsferry Community Council	Kirkliston Community Council
Eskbank and Newbattle Community Council	Kirknewton Community Council
F.O.T.R.A Resource Project, Kirkcaldy	Knightsridge Community Council
Falkirk Council Help & Information Service	Knightsridge Neighbourhood Network
Falkirk Council Members	Ladywell Community Council
Falkirk Voluntary Action Resource Centre	Largo Area Council
Fauldhouse Community Council	Largoward and District Community Council

Largoward Public Hall	Pitteuchar, Stenton & Finglassie Community Council
Leith/Bonnington Community Council	Polbeth Community Council
Leith/Harbour Community Council	Polmont Community Council
Leith/Links Community Council	Portobello Community Council
Leitholm, Eccles & Birgham Community Council	Provosts Land Residents Association
Leslie Community Council	Pumpherstons Community Council
Leven Community Council	Queensferry and District Community Council
Liberton Community Council	Ratho Community Council
Linlithgow Community Council	Reddingmuirhead Community Council
Linlithgowbridge Community Council	Rights Office Fife
Loanhead and District Community Council	Rimbleton & South Parks Residents Association
Longniddry Community Council	Rosewell and District Community Council
Longstone Community Council	Roslin and Bilston Community Council
Lorne Community Council	Royal Burgh of Kilrenny, Anstruther and District
Lower Buckhaven Tenants & Residents Association	Royal Burgh of Pittenweem & District Community Council
Macmerry & Gladsmuir Community Council	Royal Burgh of St. Andrews Community Council
Marchmont and Sciennes Community Council	Sauchenbush, Valley & Templehill Residents Association
Markinch Community Council	Scottish Borders Council Members
Mayfield/Easthouses Community Council	Scottish Environment Protection Agency
McDuff Tenants & Residents Association	Shieldhill & California Community Council
Memorial Court Tenants Association	Sighthill/Broomhouse and Parkhead Community Council
Merchiston Community Council	Southside Community Council
Mid Calder Community Council	St. Monans Community Council
Midlothian Community Education	Star of Markinch Community Council
Midlothian Womens Aid	Stenhouse Community Council
Morningside Community Council	Stirling Council Members
Murieston Community Council	Stirling Voluntary Association
Murrayfield Community Council	Stockbridge Community Council
Musselburgh and Inveresk Community Council	Strathfillin Community Council
New Gilston & Woodside Hall	Strathkinness Community Council
New Town, Broughton and Pilrig Community Council	Strathkinness Village Hall
Newhaven Community Council	Swan Court Residents Association
Newtongrange Community Council	Swinton & Ladykirk Community Council
North Berwick & District Senior Citizens Association	Tanshall Resident Association
North Berwick and District Round Table	The Callander Project
North Berwick Community Centre	Thornton Community Council
North Berwick Community Council	Tollcross Community Council
North Berwick Environmental Trust	Torphichen Community Council
North Berwick Ladies Circle	Trinity Community Council
North Berwick Probus Club	Trossachs Community Council
North Berwick Rotary Club	Tyne water Community Council
North Glenrothes Community Council	Uphall Community Council
North Glenrothes Tenants & Residents Association	Uphall Station Community Council
Northfield/Willowbrae Community Council	VAWL (Voluntary Action West Lothian)
Philipstoun Community Council	Volunteering First, Dalkeith

VONEF, Cupar
 West Barns Community Council
 West Calder & Harburn Community Council
 West End Community Council
 West Lothian Association of Community Councils
 West Lothian Chamber of Commerce
 West Lothian Council Advice Service
 West Lothian Council Members
 West Wemyss Community Council
 Westfield Community Council
 Whitecross Community Association
 Winchburgh Community Council
 Youth Clubs Fife

Issues raised at each meeting

St Monans: 10 August 2000

ISSUE: Metering.

Evidence/Enquiry: Will metering be compulsory for domestic customers?

Action/Response: East of Scotland Water Authority gave assurances that they had no plans to compulsory meter all domestic customers. The Commissioner confirmed this statement.

ISSUE: Withdrawal of reliefs from charitable organisations.

Evidence/Enquiry: Concern was expressed about the impact on the water bills of certain charitable organisations of the removal of reliefs.

Action/Response: The Commissioner gave an explanation of the current system of reliefs and abatements and the requirement not to show undue preference for any customer group. East of Scotland Water Authority outlined the benefits of installing a water meter in non-domestic properties.

ISSUE: Delay in the implementation of East of Scotland Water Authority's investment programmes.

Evidence/Enquiry: Concern was expressed about the postponement of Carnbee treatment works and the delay to Colinsburgh mains renewal in Largo.

Action/Response: The Commissioner outlined the action his office would be taking to ensure that the three water authorities' planned investment would be undertaken.

ISSUE: Charges and affordability.

Evidence/Enquiry: Concern was expressed that water charges had doubled since 1996 and the questioner asked whether this would be likely to happen over the next four years.

Action/Response: The history of the current organisation of the Scottish water industry was given by the Commissioner along with a full explanation of the water authorities' charging structures. The Commissioner outlined his current view on the likely future of water and sewerage charges.

Peebles: 27 September 2000

ISSUE: Metering.

Evidence/Enquiry: Will metering be compulsory for domestic customers?

Action/Response: The Commissioner confirmed that this would not be the case but that it will be an option for those customers that want it.

ISSUE: Withdrawal of reliefs.

Evidence/Enquiry: There is concern about high bills for charities etc.

Action/Response: It was explained that the decision to remove, or keep reliefs can only be made by the Scottish Executive.

ISSUE: Make up of the Committee.

Evidence/Enquiry: There is no Borders representative on the Consultative Committee. None of the experienced members from the Customers Council had been retained.

Action/Response: The Commissioner explained that there is a statutory requirement for the Committees to be non-political. There were no suitable candidates from the Borders area. However, members of the Committees do not just represent the places where they live, but the whole of their water authority area.

North Berwick: 2 November 2000

ISSUE: Metering.

Evidence/Enquiry: Why is there a standing charge plus a volumetric charge?

Action/Response: The Commissioner explained that the standing charge reflects the fixed cost nature of the Scottish water industry. It covers things like maintenance of the

infrastructure. The volumetric charge reflects the costs of treating specific volumes of raw water or sewage.

ISSUE: Pipe in West Bay area.

Evidence/Enquiry: The pipe is sometimes exposed.

Action/Response: The East of Scotland Water Authority representative stated that they are monitoring it, and are hoping to propose a solution shortly.

ISSUE: Bathing standards on West Beach.

Evidence/Enquiry: Discharge is visible.

Action/Response: All East of Scotland Water Authority discharges are treated so it is likely to be private discharges that are causing the problem. The problem will be raised with the Scottish Environment Protection Agency.

ISSUE: Capacity of pipes in the area.

Evidence/Enquiry: A large area of land is due for development soon and there is concern about whether the sewerage system will have enough capacity.

Action/Response: East of Scotland Water Authority will provide further information to the customer.

ISSUE: Power of the Commissioner.

Evidence/Enquiry: Can fines be levied against the water authorities?

Action/Response: The Commissioner explained that he cannot do this under the current legislation, but it may be possible if licensing is introduced. Licenses may be issued to both the existing authorities and new entrants to the industry.

ISSUE: Profits of authorities.

Evidence/Enquiry: Will these be given back to the customer?

Action/Response: The Commissioner confirmed that this would happen in principle, but at the moment there aren't any profits. It is hoped that increases in efficiency will initially remove the need for higher charges and then will make the authorities profitable, reducing charges.

Coldstream: 12 December 2000

ISSUE: Make up of committees.

Evidence/Enquiry: Why is there no Consultative Committee member from the Borders?

Action/Response: The Commissioner's representative

explained the selection procedures used and advised that there were no suitable candidates from the Borders area. However, members of the Committees do not just represent the places where they live, but the whole of their water authority area.

ISSUE: Reliefs.

Evidence/Enquiry: There was concern about the removal of reliefs from village halls.

Action/Response: The Commissioner's representative explained that the Scottish Executive consultation is still in progress. An explanation of the current system of reliefs and abatements and the requirement not to show undue preference for any one customer group was given.

ISSUE: Billing of small businesses.

Evidence/Enquiry: How will this change in the future?

Action/Response: East of Scotland Water Authority stated that improvement is ongoing. Meter fitting to all non-domestic customers is the long-term goal. This will provide a much fairer charging structure.

ISSUE: Sewerage facilities in Eccles.

Evidence/Enquiry: Lack of facilities is hampering development.

Action/Response: East of Scotland Water Authority explained that this is not currently at the top of the list of priorities.

Bo'ness: 8 February 2001

ISSUE: Chlorination.

Evidence/Enquiry: Customers complained of a chlorine taste in the water.

Action/Response: Possible causes were explained. It was agreed that the Commissioner would monitor complaints received by his office. East of Scotland Water Authority will sample the water and scour the pipes.

ISSUE: Charges and affordability.

Evidence/Enquiry: Customers were concerned about the recent charges increases, and the level of future charges.

Action/Response: Explanation was given of why charges have risen sharply, and how efficiencies should prevent such steep rises in the future. The affordability issue is currently being considered by the Commissioner and will be included in his next Strategic Review of Charges.

ISSUE: Merging of the authorities.

Evidence/Enquiry: Customers were concerned that a single authority would not be locally accountable.

Action/Response: It was explained that this was a matter for the Scottish Executive, and that no plans to merge the three authorities had been announced.

Kirkcaldy: 1 May 2001

ISSUE: Withdrawal of reliefs from charitable organisations.

Evidence/Enquiry: Concern was expressed about the impact on the water bills of certain charitable organisations by the removal of reliefs.

Action/Response: The Commissioner gave an explanation of the current system of reliefs and abatements and the requirement not to show undue preference for any customer group.

ISSUE: Charges and affordability.

Evidence/Enquiry: Why have water bills increased, and will bills increase another 25% over the next five years?

Action/Response: Explanation was given of why charges have risen sharply, and how efficiencies should prevent such steep rises in the future. There followed a full discussion on the affordability and charging system for water and sewerage charges.

ISSUE: Council Tax bands.

Evidence/Enquiry: Why can't water and waste water services be provided free of charge to the poor and why are Council Tax Bands used as a basis for water and sewerage charges rather than income tax?

Action/Response: The Commissioner explained the history of the water authority charging structure.

ISSUE: Environmental pollution.

Evidence/Enquiry: Concern was expressed about the current pollution of the Firth of Forth.

Action/Response: The Commissioner described the history of under-investment by the Scottish water industry and the role that his office will play to ensure the delivery of investment projects by the water authorities in the future.

ISSUE: Role of the Scottish water authorities.

Evidence/Enquiry: What do the three water authorities actually do?

Action/Response: East of Scotland Water Authority and the Commissioner described in detail the duty of the water authorities and the Commissioner's office.

Denny: 15 May 2001

ISSUE: Water and sewerage pipe renewal.

Evidence/Enquiry: (1) Which material is used for pipe renewal, (2) should the scale in the pipe worry customers, (3) will polyethylene pipes deteriorate quickly?

Action/Response: East of Scotland Water Authority answered these questions in full. (1) The material used for pipe renewal is mainly polyethylene and ductile iron, (2) Scale in the pipe should not worry customers. It is unsightly, but does not pose a health risk. If the scale is disturbed at any time by, say, a burst pipe, flush the tap until it runs clear. (3) Polyethylene pipes have a life expectancy of over 80 years.

ISSUE: Metering.

Evidence/Enquiry: Will domestic customers be metered like non-domestic customers?

Action/Response: Explanation of general metering issues for domestic customers was given. Domestic customers can have a meter fitted at no cost if it will save them money. They can opt out of using a meter if it proves uneconomic. Codes of Practice and Schedule of charges booklets were handed out. East of Scotland Water Authority can provide a pack that explains the situation with regard to meters. It will depend on what Council Tax Band you are in and your water usage whether you will save money or not. East of Scotland Water Authority does not actively promote the fitting of meters to domestic properties.

ISSUE: Metering.

Evidence/Enquiry: Would churches be better off having their supply metered?

Action/Response: It was advised that, given their high rateable value and low water usage, a church would almost certainly be better off if fitted with a meter. East of Scotland Water Authority has a rolling programme to fit meters to non-domestic customers.

ISSUE: Water treatment.

Evidence/Enquiry: How much treatment do we have to give water in Scotland in comparison with England?

Action/Response: The East of Scotland Water Authority

representative explained that the fact that there are many underground sources in England tends to mean that the treatment required is less than the water sourced from Scottish lochs or reservoirs.

ISSUE: Water treatment.

Evidence/Enquiry: Why do we have to treat water to such high standards?

Action/Response: East of Scotland Water Authority must meet the standards for water quality set by EU legislation. The bulk of recent investment has been on waste water treatment, but this will swing towards drinking water treatment facilities in the future.

ISSUE: Water treatment.

Evidence/Enquiry: Is the rest of Europe working to the same standards as us?

Action/Response: The European Union is taking a very tough line on non-compliance. Examples of £65,000 per day fine for pollution of Blackpool beach and the fine imposed on the city of Brussels for breaching standards were given.

ISSUE: Charges.

Evidence/Enquiry: Water bills have increased sharply, will this continue?

Action/Response: An explanation of why charges have risen sharply, and how efficiencies should prevent such steep rises in the future was given. People want to know what their bills are likely to be so that they can plan ahead. The Commissioner's Strategic Review of Charges, to be submitted during late 2001, will set the cap on the water authorities' revenue until 2006.

ISSUE: Estimates for new water supply to new industrial units.

Evidence/Enquiry: One customer had received estimates that varied from £4,500, to £3,000, then up to £6,000.

Action/Response: This was agreed to be unacceptable and the East of Scotland Water Authority representative promised to discuss the matter in detail with the customer at the end of the meeting.

ISSUE: Water pressure.

Evidence/Enquiry: A customer complained that the water pressure at his house near Avonbridge is very low.

Action/Response: The East of Scotland Water Authority

representative confirmed that they are aware of the problem and that they are currently carrying out work to raise the pressure to their normal standards.

Tyndrum: 9 June 2001

ISSUE: Service improvements.

Evidence/Enquiry: What are East of Scotland Water Authority going to do to improve water and sewage services in the Tyndrum and Crianlarich areas, where they are currently opposing plans for any new build?

Action/Response: The Commissioner explained that the improvements required are in the capital plan for 2003. Although East of Scotland Water Authority will object to any plans for new build at this time, due to the capacity of their infrastructure, this does not necessarily mean that the planning authority will reject the application.

ISSUE: Investment priorities.

Evidence/Enquiry: How does East of Scotland Water Authority decide investment priorities?

Action/Response: The East of Scotland Water Authority representative explained that the major driver at present is the need to comply with legislation on water and sewage treatment. Development needs are not the top priority.

ISSUE: European Union funds.

Evidence/Enquiry: Can European Union funds be obtained to improve the sewage treatment plant, as £300,000 had been granted to a similar scheme in Auchterarder?

Action/Response: There was no knowledge of any funds being made available, but the East of Scotland Water Authority representative agreed to investigate. It was suggested that the customer should approach the Scottish Environment Protection Agency with their concerns about possible river pollution.

ISSUE: Water treatment.

Evidence/Enquiry: Why is Scottish water treated to such high standards?

Action/Response: The East of Scotland Water Authority representative explained that standards for water quality are set by European Union legislation. The bulk of recent investment has been on waste water treatment, but this will swing towards drinking water treatment facilities in the future.

ISSUE: Investment.

Evidence/Enquiry: How much are the Commissioner's views taken into account when investment plans are set?

Action/Response: The authorities decide on their investment programme, which is monitored by the Commissioner to ensure that it is delivered efficiently and is good value for money.

ISSUE: Water quality.

Evidence/Enquiry: Last year £1 million was spent upgrading water treatment facilities at Killin, but within a short space of time bottled water was being issued because the water was not up to standard. What was the problem?

Action/Response: The representative from East of Scotland Water Authority was not aware of the exact cause, but he suspected that it was due to breakdown of the plant.

ISSUE: Sewer quality.

Evidence/Enquiry: At Crianlarich, the sewers outside the village hall back up during heavy rainfall. What can be done about it?

Action/Response: The representative from East of Scotland Water Authority explained that improvements are not planned until 2003, but the Community Council could approach the Scottish Environment Protection Agency to see if it can make a case for increased priority.

ISSUE: Supply of services.

Evidence/Enquiry: Is there a legal obligation to supply water and sewerage facilities?

Action/Response: The Commissioner confirmed that the water authorities do have a legal obligation to provide domestic water and sewerage services, and trade effluent services, providing this can be done at a 'reasonable cost'.

ISSUE: Reliefs and metering.

Evidence/Enquiry: Can a meter be fitted to the premises of a charity? What would be the level of charges?

Action/Response: The current situation regarding relief was explained and the customer was given the East of Scotland Water Authority booklet on charges.

ISSUE: Competition.

Evidence/Enquiry: How will a competitor to East of Scotland Water Authority supply water to Tyndrum?

Action/Response: The Commissioner explained that if

competition does happen, it will take a similar form to competition in the other utilities. The consumer will probably buy bundled services from someone like Powergen, who will supply water through the East of Scotland Water Authority system.

ISSUE: Supply of services.

Evidence/Enquiry: Is there anything to stop someone installing a private water supply?

Action/Response: The Commissioner explained that any private water supply would have to meet water quality standards, which might mean having to install a UV treatment system.

ISSUE: Charges.

Evidence/Enquiry: Are charges the same in the three authorities?

Action/Response: The Commissioner explained that North of Scotland Water Authority charges are much higher at present, but will be harmonised if the proposed Scottish Water is created.

Musselburgh: 12 July 2001

No members of the public attended this meeting.

Bathgate: 14 August 2001

ISSUE: Low attendance at the meeting.

Evidence/Enquiry: A local councillor asked if it was normal to advertise public meetings at short notice, as this, he felt, was the reason for a poor turnout.

Action/Response: A member of the Commissioner's staff explained that normally invitations are sent at least three weeks in advance of the meeting. Unfortunately, due to an administrative error, invitations to councillors had not been issued until the day before the meeting. The meeting was advertised in the local newspaper, and all the local community councils were invited. The councillor felt sure that a representative from Bathgate Community Council would have attended had he known. A member of the Consultative Committee confirmed that they had personally written to Bathgate Community Council in February offering a presentation and question and answer session with no response. Details of past and planned consultations in the West Lothian area were given.

ISSUE: Charging.

Evidence/Enquiry: How do charges compare between West of Scotland Water Authority and East of Scotland Water Authority?

Action/Response: The Commissioner explained that they are very similar, but the charges levied by North of Scotland Water Authority are higher.

ISSUE: Metering.

Evidence/Enquiry: Can a domestic customer pay by meter for the water used?

Action/Response: The East of Scotland Water Authority representative explained that meters can be installed on request on domestic properties. There is a standing charge which largely reflects the actual cost of access to the public water supply and a volumetric charge for water consumption.

ISSUE: Affordability.

Evidence/Enquiry: Why can't there be a rebate system as there is for Council Tax?

Action/Response: The Commissioner explained that this is not possible because of the lack of data about income among people who live in low-banded properties. There are, however, discounts available for single people and those with a disability. The Scottish Executive has capped charges for those on Council Tax benefit at £180. This is intended to bring the charge down to a more affordable level. It benefits customers in receipt of Council Tax benefit with properties in Band B or above in the East of Scotland Water Authority area and West of Scotland Water Authority area, and all customers who receive Council Tax benefit in the North of Scotland Water Authority area.

ISSUE: Charges.

Evidence/Enquiry: Why can't water be subsidised by the Scottish Executive to lower the charges?

Action/Response: The Commissioner gave an explanation of the impact of any Scottish Executive subsidy on other public spending and on taxes.

ISSUE: Charges.

Evidence/Enquiry: How will the charges change in the future?

Action/Response: The Commissioner explained that they could go up by a further 20-25% over the next four years. From then price rises are expected to be below the rate of inflation.

Without the likely introduction of the proposed Scottish Water, price rises would have to be much larger.

ISSUE: Sewer capacity.

Evidence/Enquiry: Sewerage in Westfield is at capacity yet 200 houses are proposed to be built this year. What plans have been made to support the new housing development?

Action/Response: The East of Scotland Water Authority representative offered to investigate, but explained that while some planning permission may have been turned down for houses in the past, every case was dealt with individually, as there were often different circumstances.

ISSUE: New developments.

Evidence/Enquiry: Do developers pay a contribution towards new sewage treatment plants?

Action/Response: The East of Scotland Water Authority representative explained that they do not at the moment but the issue was raised in the proposals for the Water Bill.

ISSUE: Pollution.

Evidence/Enquiry: A local business has allegedly been polluting the River Almond for over eight years, and the Scottish Environment Protection Agency 'appears' to be doing nothing about it.

Action/Response: The East of Scotland Water Authority representative offered to investigate the issue with the help of the Scottish Environment Protection Agency.

ISSUE: Pollution.

Evidence/Enquiry: When are our beaches going to be cleaned up?

Action/Response: The Commissioner explained that by 2005 the issue must be resolved in Scotland, otherwise large fines will be incurred by the water authorities.

ISSUE: Water supplies.

Evidence/Enquiry: How much water is taken from Loch Lomond, and why is this not more? Are water supplies linked? Why don't they use the smaller lochs any more?

Action/Response: The East of Scotland Water Authority representative explained that Loch Lomond water requires pumping, rather than travelling simply by gravity so it is expensive. The supplies are not all linked but the number of links is being increased. There is both a cost and quality

advantage using the larger sources like Carron Valley, Loch Turret, Loch Lomond and Loch Katrine.

ISSUE: Abandoned reservoirs.

Evidence/Enquiry: What happens to reservoirs that are no longer used?

Action/Response: The East of Scotland Water Authority representative explained that this depends on what is in the title deed. In some cases the land is returned to its former state and to its former owner (or their descendants). This may mean that the dam is breached and then the land seeded for grazing.

ISSUE: Lead piping.

Evidence/Enquiry: Has East of Scotland Water Authority got rid of all lead pipes?

Action/Response: The East of Scotland Water Authority representative explained that this is a long-term replacement issue. 200km of water main and 600 lead communications pipes have been replaced this year; 2013 is the goal for replacement of all lead pipes. West Lothian Council grants may be available to replace lead supply pipes to properties.

ISSUE: Scottish Water.

Evidence/Enquiry: When will there be one water authority in Scotland? Will this mean a national rate rather than a local rate?

Action/Response: The Commissioner explained that the timescale is dependent upon the Water Bill going through Parliament, but it is likely to take effect from 1 April 2002. Charges will be harmonised by 2006. Harmonised charges will be mostly to the advantage of those in the North.

ISSUE: Fluoridation.

Evidence/Enquiry: Is fluoride of water supplies an issue?

Action/Response: The Commissioner said that at his meetings in public, customers have raised the question, with differing views. He understands that fluoridation is not planned in Scotland.

ISSUE: Leakage.

Evidence/Enquiry: Does East of Scotland Water Authority assess water leakage?

Action/Response: With new equipment in the last three years, East of Scotland Water Authority has developed a better understanding of the problem. Across the East of Scotland Water Authority area it is about 30-40%.

ISSUE: River water quality.

Evidence/Enquiry: The water in the River Almond has improved, with regard to pollution. What plans are there to improve it further?

Action/Response: The East of Scotland Water Authority representative offered to provide further information, as he was unable to provide an immediate answer.

Edinburgh: 4 September 2001

ISSUE: Payment.

Evidence/Enquiry: How many people can't, don't, won't pay?

Action/Response: The East of Scotland Water Authority representative present did not have the exact figures, but offered to find out and inform the customer.

ISSUE: Sludge treatment.

Evidence/Enquiry: What is done with sludge today and what is planned for the future?

Action/Response: The East of Scotland Water Authority representative explained the policy to recycle sludge where possible and described a possible use for energy in manufacturing. There has been recent interest by a cement works in Dunbar.

ISSUE: Value for money.

Evidence/Enquiry: How do customers know that they get value for money from East of Scotland Water Authority?

Action/Response: 'Value for money' is difficult to quantify, but performance and cost benchmarks from the English plcs have been used by the Commissioner to evaluate the authorities' performance.

ISSUE: Billing.

Evidence/Enquiry: How does a customer know what their water charge is when it is included in their Council Tax bill?

Action/Response: The Commissioner explained that the water and sewerage charges are shown as a separate line on the bill.

ISSUE: Water treatment.

Evidence/Enquiry: What are the plans for Alnwickhill Water Treatment plant in Liberton?

Action/Response: The East of Scotland Water Authority

representative explained that there are three plants which serve Edinburgh: Marchmont, Fairmilehead and Alnwickhill. These are all used constantly. There have been studies into future water requirements, but there are no plans to change the status of Alnwickhill.

ISSUE: Capital costs.

Evidence/Enquiry: The capital spend is 80% on compliance. Will costs come down in the future?

Action/Response: The Commissioner explained that the historic under spend and the capital-intensive nature of the industry mean that costs are likely to go up rather than down in the future.

ISSUE: Competition.

Evidence/Enquiry: Can the Commissioner explain further the competitive environment he referred to in the gas and electricity industries? Will this lead to lower charges for customers?

Action/Response: The Commissioner explained that competition is likely in the retail areas only because there are significant barriers to entry in other areas of the business. Since retail costs represent only a small percentage of overall costs this was unlikely to impact on the customer greatly in lowering charges.

ISSUE: Water usage.

Evidence/Enquiry: What is the volume of water used by domestic versus non-domestic customers? How is this reflected in water charges?

Action/Response: The exact figures were not available but the East of Scotland Water representative agreed to find out and inform the customer. The Commissioner gave a rough figure of 46% of revenue being from non-domestic customers who subsidise domestic customers.

ISSUE: Lead pipes.

Evidence/Enquiry: What is East of Scotland Water Authority's view of delivery of water through lead pipes?

Action/Response: East of Scotland Water Authority are in the process of renewing all mains and are encouraging householders to replace supply pipes through their garden into their house. Grants from the City of Edinburgh are available for residents to help offset the costs.

ISSUE: Sewerage capacity.

Evidence/Enquiry: Queensferry has mushroomed and there are further plans to develop more houses, a hotel and offices. Sewerage facilities are supposed to be at bursting point already, can East of Scotland Water Authority commit to ensure that it can cope?

Action/Response: The East of Scotland Water Authority representative will investigate and inform the customer.

ISSUE: Reliefs.

Evidence/Enquiry: What is the status of lack of relief for charities?

Action/Response: The Commissioner explained that the McFadden Committee recommended relief for charities but the funding for this is unclear. (It could come from additional taxation or increased charges to other water authority customers.) This is an area of current debate.

ISSUE: Recent flooding in Edinburgh.

Evidence/Enquiry: Was this due to sluice gates not being opened? Is there someone responsible for this round the clock now?

Action/Response: The East of Scotland Water Authority representative explained that the reservoir filled and overflowed. There are no sluice gates. The process is automated rather than being managed by a person.

ISSUE: Water quality.

Evidence/Enquiry: Colour and taste problems were reported in the water in the Corstorphine area.

Action/Response: Chlorine needs to be used for safety reasons. The East of Scotland Water Authority representative offered to get a sample taken and report back on the findings. He thought the filtering at the new Marchbank Works should have helped but maybe it is a water mains problem.

ISSUE: Billing.

Evidence/Enquiry: Would East of Scotland Water Authority prefer direct billing of customers rather than the current local authority arrangement?

Action/Response: The East of Scotland Water Authority representative personally would prefer direct billing as it is his main interface with customers.

ISSUE: Web sites.

Evidence/Enquiry: What are the Commissioner's and East of Scotland Water Authority's web site addresses?

Action/Response: Both addresses were given.
(www.watercommissioner.co.uk and www.esw.co.uk)

ISSUE: Customer information.

Evidence/Enquiry: A customer stated that customers are unaware of both the Water Industry Commissioner for Scotland and the Water Industry Consultative Committees. Information on both of these should be included in bills.

Action/Response: The comment was noted.

ISSUE: Role of the Consultative Committees.

Evidence/Enquiry: When Consultative Committee members report to the Commissioner, do they reflect their own views or those of customers?

Action/Response: A Consultative Committee member explained that it is the views of the customers with whom they have come into contact that are reported back.

ISSUE: Management of Cramond pumping station.

Evidence/Enquiry: A member of the public stated that they think East of Scotland Water Authority's management of the new pumping station at Cramond is excellent.

Action/Response: The comment was noted.

East of Scotland Consultative Committee quarterly reports on members' consultations

1 June 2000–30 September 2000

Groups consulted:

None.

Issues raised:

None.

Other activities:

- Members attended public meetings arranged by East of Scotland Water Authority in Kinghorn and Corstorphine where major work is to be carried out.

- Members responded to the Scottish Executive consultation papers: *Managing change in the water industry, and Affordability of water and sewerage charges.*

1 October 2000–31 December 2000

Groups consulted:

Blane Area Forum

Bo'ness residents at opening of new waste water treatment plant

Borders Community Planning Seminar: Hawick

Endrick Area Forum

Forth Area Forum

Issues raised:

- Charges: Customers express concern over future rises.
- Billing problems: This is a particular problem for small business customers.
- Reliefs: Charges for clubs, village halls and charities are of particular concern in the Borders.
- Water quality: The chlorine taste is unpleasant.

Other activities:

- Members attended East of Scotland Water Authority board meetings in St Andrews and Edinburgh.
- Presentations were given to St Margaret's Academy, Livingston and Inveralmond High School, Livingston.

1 January 2001–31 March 2001

Groups consulted:

Dedridge Community Council

Dunblane Community Council

Grangemouth Probus Club

Linlithgow Community Council

Merchiston Community Council

Polmont Probus Club

Uphall Community Council

Issues raised:

- Commissioner's role: This was not well known.
- There is a lack of awareness among the public of issues such as competition, efficiency targets, public finance initiatives, and the backlog and history of under investment.

- Method of charging: Customers do not feel that charges based on Council Tax bands are fair. They would prefer a measure of the number of people in the household, or the household income. In addition, customers would like charges to be harmonised across Scotland.
- Metering: Many customers are not aware that they can ask for a meter to be fitted.
- Water quality: Customers think that water is over-treated and that this leads to a taste or smell of chlorine.
- The proposed Scottish Water: This is seen as positive provided that local accountability was maintained.
- Privatisation: Customers are concerned that water should be kept in the public sector.
- New developments: Customers feel that developers should pay for new properties to be connected to the water and sewerage systems.
- Customers are generally happy with East of Scotland Water Authority's operational performance and communications.
- The decision to follow the central option for investment did not meet with general approval. Many people felt that the enhanced option was the best way forward.
- The proposed Scottish Water: This was seen as a positive step, provided that local accountability was maintained.
- Privatisation: Customers are concerned that water should be kept in the public sector.
- The effect of possible competition in water supply is not well understood.
- Many people feel that water charges are too high and should be subsidised by the Scottish Executive.
- Metering policy and availability is not well understood, but many people think that metering would be a fairer method of charging.
- Many people are pleased with the operational service they receive from East of Scotland Water Authority.
- Poor water pressure and quality are often reported in rural areas.
- East of Scotland Water Authority staff report being unmotivated and concerned for their future.

Other activities:

- Members attended the Transport and Environment Committee enquiry.

1 April 2001- 30 June 2001

Groups consulted:

Arnprior Community Council
 Bo'ness Community Council
 Broxburn Community Council
 Cowie Community Council
 Eastern Villages Area Forum
 Elie Community Council
 Forth Valley Economic Forum
 Greater Pilton Community Alliance
 Highland Area Forum: Callander
 Scottish Voluntary Association
 St Monans Community Council
 Two members of the public
 Winchburgh Community Council

Issues raised:

- Commissioner's role: This is still not well known.
- Some customers believe that lack of investment in water and sewerage services in rural areas is hampering development.

Other activities:

- Members attended the East of Scotland Water Authority board meeting in Stirling.
- A response was given to the Scottish Executive consultation on the proposed Water Services Bill.

1 July 2001- 30 September 2001

Groups consulted:

Callander Rotary Club
 Dollar Community Council
 Elie and the Royal Burgh of Earlsferry Community Council
 Knightsridge Neighbourhood Network (Livingston)
 Largoward and District Community Council, and members of the public
 One Local Councillor
 Residents of Grangemouth
 St Andrews Community Council
 Stirling Voluntary Association
 Tullibody, Cambus and Glenochil Community Council
 Whitburn Probus Club

Issues raised:

- Quality and Standards Process: Customers were surprised that the Transport and Environment Committee supported the central option for the quality and standards process rather than the enhanced option. Customers support money being spent to pollution control.
- The proposed Scottish Water: Support was given for the formation of a single authority, but customers expressed concern that local accountability would be lost.
- Customers are concerned that the creation of Scottish Water would mean that their bills will go up to subsidise people in the North.
- One customer thought that the proposed Scottish Water should be exempt from the Competition Act.
- Charging methods: It was suggested by one individual that every household should be charged the same amount, rather than by Council Tax band.
- One customer thought it would be better to link water charges to income and make it a tax.
- Reliefs: Customers are concerned about the withdrawal of reliefs to charitable organisations.
- Provision in rural areas: Customers are concerned that the lack of water and sewerage services is preventing the provision of affordable housing in rural areas.
- Customers are concerned that the Commissioner's office is not well known. Some customers did not know of East of Scotland Water Authority either, but go through the local council who provides their housing if they have any water problems.
- Lead pipes: Customers are worried about lead pipes and other potential health hazards.
- Environment: Customers are concerned about whether environmental standards are being properly implemented and whether tangible improvements are being achieved.
- A customer complained that East of Scotland Water Authority had not restocked Grange Burn as promised after an alleged pollution incident during the construction of a new pumping station.
- One customer thought the area around Loch Venachar is not being maintained properly.
- Sludge disposal: A farmer was concerned that the sewage sludge available for spreading on farmland might contain traces of heavy metals. He feared that supermarkets might refuse to buy produce grown on treated land.
- Information: Customers requested information about having a domestic meter fitted, East of Scotland Water Authority's policy for mains renewal, harmonisation of charges and the affordability scheme.
- Fluoridation: One customer was concerned that fluoride is not added to water as he thought it was important to protect children's teeth.
- Customers in Ladywell and Erskine complained of bad tasting water, low pressure and poor communication from East of Scotland Water Authority.
- Management accountability: Customers are concerned that East of Scotland Water Authority management staff are not accountable.
- One customer was concerned about increases in salary for top executives. He also felt that the Commissioner only exists to justify the Scottish Executive in raising charges. He does not believe the proposed efficiency savings are realistic and thinks that the proposed Scottish Water is privatisation by the back door.
- Good service: Customers in Whitburn are very happy about the way the mains renewal has been carried out, and about the service they receive from East of Scotland Water Authority.
- Customers in Tullibody were pleased with the service they receive from East of Scotland Water Authority.
- Customers are concerned about the large payouts received by employees leaving the water authorities.
- Smells at waste water treatment works: Customers are extremely concerned about flooding and foul smells in Largoward, and the discharge of effluent into a local burn. Customers are also concerned about a smell from Dalderse Waste Water Treatment Works, and the way East of Scotland Water Authority has handled their complaints about it.

Other activities:

- A member attended the opening of Kinneil Kerse Waste Water Treatment Plant.
- A member attended a Scottish Consumer Council Chairman's meeting.

North of Scotland Consultative Committee Public Meetings

Location	Date	Number of Invites	Number of Posters	Advert Placed	Number of News Releases	Attendance	Total cost
Ullapool	17/8/00	19	–	Ross-shire Journal	2	16	£117
Peterhead	12/9/00	26	–	Buchan Observer	1	9	£110
Wick	24/10/00	41	–	John 'O' Groats Journal	1	12	£114
Broughty Ferry	5/12/00	16	18	Arbroath Herald	1	7	£131
Banff	15/2/01	14	27	Banffshire Journal	1	10	£115
Stonehaven	24/4/01	17	31	Mearns Leader	2	10	£65
Aberdeen	12/6/01	26	154	Press and Journal (Aberdeen)	3	19	£163
Lerwick	28/6/01	19	26	Shetland Times	1	6	£93
Kyle of Lochalsh	4/7/01	26	20	West Highland Free Press	1	9	£104
Stornoway	5/7/01	33	29	Stornoway Gazette	1	1	£151
Dundee	7/8/01	18	87	Dundee Courier	3	8	£185
Total		255	392		17	107	£1348

Invitations to these meetings were issued to:

Aberchirder/Marnoch Community Council
 Aberdeen City Council Members
 Aberdeen Council of Voluntary Organisations
 Aberdeen Counselling & Information Service
 Aberdeenshire Advocacy Service
 Aberdeenshire Council Members
 Aberdour/Tyrie Community Council
 Achmore & Stromeferry Community Council
 Age Concern, Wick
 Airidhantuim Community Council
 Alvah/Forglan Community Council
 Angus Association of Voluntary Organisations
 Angus Care and Repair
 Arburthnott Community Council
 Ardler Information Point
 Ashley and Broomhill Community Council
 Assynt Community Council
 Auchterless Inverkeithny Community Council
 Aultbea Community Council
 Back Community Council
 Banchory Community Council
 Banff Town & Country Club

Banffshire and Macduff Community Council
 Barvas Community Council
 Benbecula Community Council
 Benholm & Johnshaven Community Council
 Bernera Community Council
 Berneray Community Council
 Berriedale & Dunbeath Community Council
 Bettyhill, Strathnaver & Altnaharra Community Council
 Blythswood Charity
 Boddam and District Community Council
 Bornish Community Council
 Bower Community Council
 Braes Community Council
 Braeside and Mannofield Community Council
 Bridge of Don Community Council
 Broadford & Strath Community Council
 Brora Community Council
 Broughty Ferry Community Council
 Broughty Ferry Volunteer Information Point
 Bucksburn and Newhills Community Council
 Caithness Voluntary Group
 Caithness West Community Council
 Carloway Community Council
 Carnoustie Area Forum

Carnoustie Community Council	Golspie Community Council
Castlehill/Pittodrie Community Council	Gourdon Community Council
Castletown Community Council	Halkirk Community Council
Catterline/Kinneff & Dunnottar Community Council	Helmsdale Community Council
Citizens Advice Bureaux	Highland Council Members
Clisham Community Council	Highlands of Scotland Tourist Board
Coalmoss Croft Community Council	Hilltown and District Community Council
Coigach Community Council	Homestart Caithness
Collieston Amenities Committee	Inverarity Community Council
Community Association, Bruar	Invercairn Community Council
Community Association, Thurso	Lochdar Community Council
Community Association, West Murkle	Kilmuir Community Council
Consumer Advice, Aberdeen	Kincardine & Deeside Voice
Cornerstone Community Care	Kincardine & Deeside Voluntary Action Network
Cornhill/Ordiquhill Community Council	King Edward/Gamrie Community Council, Banff
Cove and Altens Community Council	Kinloch Community Council
Crathes/Drumoak/Durriss Community Council	Kinlochbervie Community Council
Cruden Community Council	Kyle Community Council
Culter Community Council	Kyle Hall Outreach Project
Cults, Bielside and Milltimber Community Council	Kyleakin & Kylerhea Community Council
Deer Community Council	Lairg Community Council
Design Development Associates, Stonehaven	Latheron & Lybster Community Council
Dornie & District Community Council	Laxdale Community Council
Dundee & Tayside Chamber of Commerce & Industry	Lochalsh Community Council
Dundee Anti-Poverty Forum	Lochboisdale Community Council
Dundee City Council Members	Lochduich Community Council
Dundee Federation of Tenants Associations	Longside and District Community Council
Dundee Voluntary Action	Mastrick/Sheddocksley Community Council
Dundee Volunteer Information Point	Maxwelltown Information Centre
Dunvegan & District Community Council	Mearns Community Council
East Sutherland Village Advisory Service	Melvich Community Council
Ellon Community Council	Methlick Community Council
Eriskay Community Council	Minginish Community Council
Ferryhill Community Council	Mintlaw and District Community Council
Fersands & Fountain Community Project	Monifieth Community Council
Fintry Community Council	Monifieth Forum
Flow Campaign	Monikie & Newbigging Community Council
Fordyce/Sandend Community Council	Murroes & Wellbank Community Council
Fraserburgh Community Council	Neighbourhood Resources Department, Dundee
Fyvie, Rothie, Monquhitter Community Council	Ness Community Council
Gairloch Community Council	New Pitsligo Community Councils
Garthdee Community Council	Newtonhill/Muchalls/Cammachmore Community Council
George Street Community Council, Aberdeen	Nigg Community Council
Glendale Community Council	North Harris Community Council
Glenelg & Arnisdale Community Council	North Kincardine Rural Community Council

North Lochs Community Council
 North Tolsta Community Council
 North Uist Community Council
 Old Aberdeen Community Council
 Ormiston Peoples Community Lounge Group
 Pairc Community Council
 Pentland Housing Association
 Peterhead and District Committee for Welfare
 Peterhead Business Association
 Peterhead Community Council
 Peterhead Rotary Club
 Peterhead Round Table
 Peterhead Townswomen Guild
 Plockton & District Community Council
 Point Community Council
 Portlethan & District Community Council
 Portree Community Council
 Portsoy and District Community Council
 Powis Community Council
 Raasay Community Council
 Rathen and District Community Council
 Residents Association, Glengolly
 Rogart Community Council
 Rosemount and Mile End Community Council
 Ross & Cromarty Enterprise Ltd
 Royal Burgh of Inverbervie Community Council
 Sandwich Community Council
 Scalpay Community Council
 Sconser Community Council
 Scottish Environment Protection Agency
 Scottish Womans Rural Institute
 Scourie Community Council
 Seaton/Linksfield/Pittodrie Community Council
 Servite Housing (Scotland) Charitable Trust
 Shawbost Community Council
 Shetland Council Members
 Sinclair's Bay Community Council
 Skeabost & District Community Council
 Skye & Lochalsh Council For Voluntary Organisations
 Sleat Community Council
 Small Business Gateway
 South Harris Community Council
 St Fergus/Crimond/Lonmay Community Council
 Staffin Community Council
 Stonehaven & District Community Council

Stornoway Community Council
 Strathy & Armadale Community Council
 Strichen and District
 Struan Community Council
 Tarves Community Council
 Tealing Community Council
 Tenants Information Service, Dundee
 Thurso Community Council
 Tillydrone Community Council
 Tongue Community Council
 Torridon and Kinlochewe Community Council
 Torry Advice Centre
 Torry Community Council
 Turriff and District Community Council
 Uig Community Council
 Waternish Community Council
 Watten Community Council
 West End Community Council, Dundee
 Wester Lochewe Community Council
 Western Isles Council Members
 Whitehills & District Community Council
 Whitfield Steering Group
 Wick Community Council
 Wick Tourist Information Centre

Issues raised at each meeting

Ullapool: 17 August 2000

ISSUE: Water quality.

Evidence/Enquiry: This had been poor for a number of years.

Action/Response: A long-term solution would involve much capital expenditure, but an interim solution was proposed by North of Scotland Water Authority.

ISSUE: Charges and affordability.

Evidence/Enquiry: Why are high charges not spread across the whole of Scotland?

Action/Response: The history of the current organisation of the Scottish water industry was given by the Commissioner along with a full explanation of the water authorities' charging structures.

ISSUE: Independence of the Water industry Commissioner for Scotland.

Evidence/Enquiry: It was felt that the Commissioner was too close to North of Scotland Water Authority and would not represent the customers.

Action/Response: A full explanation of the role and accountability of the Commissioner was given.

ISSUE: Reliefs.

Evidence/Enquiry: Withdrawal of relief from voluntary organisations.

Action/Response: An explanation of the current system of reliefs and abatements and the requirement not to show undue preference for any one customer group was given.

Peterhead: 12 September 2000

ISSUE: Trade effluent charges.

Evidence/Enquiry: Concern from a fish processor about charges and why their trade effluent could no longer be put straight into the sea.

Action/Response: Changes in European Union regulations were explained by North of Scotland Water Authority.

ISSUE: Charges and affordability.

Evidence/Enquiry: There is concern about high charges for domestic customers in the North of Scotland Water Authority area.

Action/Response: The Commissioner gave a full explanation of the charge level in the North of Scotland Water Authority area and gave assurances that the concerns of all customers would be recorded and taken into account in the preparation of the next Strategic Review of Charges.

Wick: 24 October 2000

ISSUE: Charges and subsidy.

Evidence/Enquiry: Why can the Scottish water industry not be subsidised by the Scottish Executive?

Action/Response: An explanation of the impact of any Scottish Executive subsidy on other public spending and on taxes was given by the Commissioner.

ISSUE: Comparisons with England and Wales and the European Union.

Evidence/Enquiry: Can we use best practise up here?

Action/Response: The Commissioner explained the importance of benchmarking and how comparisons with the best water companies in England and Wales will be used to set efficiency targets for the three Scottish water authorities and to improve customer service.

ISSUE: Smell from the local waste water treatment works.

Evidence/Enquiry: Concern was expressed that the local waste water treatment works would smell like the one at Fort William that received bad media coverage.

Action/Response: North of Scotland Water Authority explained what action it takes to minimise smells and outlined the role of the Scottish Environment Protection Agency and the Commissioner's office in monitoring smells.

ISSUE: Structure of Consultative Committees.

Evidence/Enquiry: How were they appointed? Why are not all areas represented?

Action/Response: The Commissioner explained the recruitment process that followed the guidelines of the Commissioner for Public Appointments and discussed the role of the members.

ISSUE: Reliefs.

Evidence/Enquiry: Concerns were expressed about North of Scotland Water Authority's consultation on the removal of charitable reliefs.

Action/Response: The Commissioner acknowledged that the consultation process could have been better, but it did still allow all interested parties to make their views known.

ISSUE: Garden drainage at a customer's property.

Evidence/Enquiry: Who is responsible?

Action/Response: Although it was confirmed by North of Scotland Water Authority that they were not responsible for this particular problem they did offer to investigate the matter further and advise on possible solutions.

ISSUE: Charges for field troughs.

Evidence/Enquiry: A customer asked why he must pay field trough charges when the field is being used for arable crops.

Action/Response: North of Scotland Water Authority explained its charging policy but suggested that the customer should consider installing a water meter. North of Scotland Water Authority offered to investigate and advise on the best course of action for the customer.

Broughty Ferry: 5 December 2000

ISSUE: Charges and affordability.

Evidence/Enquiry: Concern was expressed about the rise of 46% for domestic customers and the implications this has on the affordability of water and sewerage charges in Dundee.

Action/Response: The Commissioner gave the background to the level of North of Scotland Water Authority charges. He assured the audience that the concerns of all customers would be recorded and taken into account in the preparation of the next Strategic Review of Charges.

ISSUE: Cost of septic tank cleaning.

Evidence/Enquiry: Are there any plans to reduce this?

Action/Response: The North of Scotland Water Authority representative explained how the cost of emptying septic tanks is calculated.

ISSUE: Supply interruption information.

Evidence/Enquiry: The telephone line gave a recorded message not a real person.

Action/Response: The North of Scotland Water Authority representative gave a full explanation of their emergency procedures and assured the audience that they welcome feedback from all customers.

ISSUE: Privatisation of the Scottish water industry.

Evidence/Enquiry: Concern was expressed that all of the new investment would lead to privatisation of the industry.

Action/Response: Both the North of Scotland Water Authority representative and the Commissioner confirmed their commitment to a public water industry in Scotland and advised that the Scottish Executive had said publicly that it has no plans to privatise the industry.

ISSUE: Council Tax bands.

Evidence/Enquiry: These are not an indication of income so should not be used as a method of charging.

Action/Response: The history of the water authority charging structure was explained by the Commissioner, and the North of Scotland Water Authority representative explained the option of fitting a water meter.

Banff: 15 February 2001

ISSUE: Water quality at Banff.

Evidence/Enquiry: There is a taste of chlorine in the local water supply.

Action/Response: North of Scotland Water Authority gave a full explanation about why chlorination is compulsory under EU law and outlined the current trials ongoing at Turiff.

ISSUE: Metering and charges.

Evidence/Enquiry: What is the cost of installation and the method of charging?

Action/Response: North of Scotland Water Authority gave full details of the costs involved in the installation of a water meter and the charging levels thereafter.

ISSUE: Private water supplies.

Evidence/Enquiry: Concern was expressed about E-coli in the water.

Action/Response: North of Scotland Water Authority advised that although private water supplies do not come under their jurisdiction they can test the water for the customer.

ISSUE: Boreholes.

Evidence/Enquiry: A customer expressed concern that large users are abstracting their own water.

Action/Response: The Commissioner explained the impact on domestic charges of large users leaving the public water supply but advised that the efficiency targets recently announced by his office would help the water authorities to address this potential problem.

Stonehaven: 24 April 2001

ISSUE: Metering.

Evidence/Enquiry: When would metering be a good option for a domestic customer?

Action/Response: North of Scotland Water Authority outlined the main benefits of metering to particular customers and offered to investigate the customer's own situation and advise on the best course of action.

ISSUE: Sewer capacity.

Evidence/Enquiry: The customer wants to build a house but has been advised that the local sewer does not have sufficient capacity for an additional connection. She has not been able to get help from North of Scotland Water Authority or the Scottish Environment Protection Agency.

Action/Response: The local North of Scotland Water Authority and the Scottish Environment Protection Agency representatives present agreed to investigate this customer's problem.

ISSUE: The creation of the proposed Scottish Water.

Evidence/Enquiry: Will such a big organisation still be locally accountable?

Action/Response: The Commissioner and the North of Scotland Water Authority representative discussed the recent Scottish Executive proposals and both parties assured the audience that local accountability would be strengthened under a single authority.

ISSUE: Care of the environment.

Evidence/Enquiry: Will investment lead to environmental improvements?

Action/Response: The North of Scotland Water Authority representative outlined what environmental improvements will come from their full investment programme.

ISSUE: Relief of water charges for charitable organisations.

Evidence/Enquiry: A customer asked the Commissioner and North of Scotland Water Authority to push for relief for certain charities.

Action/Response: An explanation of the current system of reliefs and abatements and the requirement not to show undue preference for any customer group was given.

Aberdeen: 12 June 2001

ISSUE: Format of meeting.

Evidence/Enquiry: Given the format of the meeting, how much time will be available for questions from the audience?

Action/Response: The presentation by North of Scotland Water Authority and the Commissioner would last approximately 45 minutes, followed by 45 minutes for questions.

ISSUE: Consultation by Water Industry Commissioner.

Evidence/Enquiry: Who did the Commissioner consult with prior to the submission of his first Strategic Review of Charges in December 1999? This is of particular concern given the rise of 43% in domestic water and sewerage charges in the North of Scotland Water Authority area over the last two years.

Action/Response: The Commissioner confirmed to the audience that although consultation was inevitably limited by the time available, he did consult with a range of representative organisations from the domestic and non-domestic sectors.

ISSUE: North of Scotland Water Authority investment programme.

Evidence/Enquiry: Concern was expressed about the ability of North of Scotland Water Authority to actually spend the increased revenue received over the last two years.

Action/Response: The Commissioner outlined the current review procedures that are in place to ensure that each Scottish water authority achieves its investment objectives.

ISSUE: Use of Council Tax bands for charging for domestic water and sewerage services.

Evidence/Enquiry: Concern was expressed about using Council Tax bands as a basis for charging for domestic water and sewerage services. The view was raised that more people would be liable in Scotland if water sewerage charges were funded through income tax and therefore the revenue required by the three authorities would be spread over more customers.

Action/Response: The history of the water authority charging structure, as established under the Local Government (Scotland Act) 1994, was outlined by the Commissioner.

ISSUE: Affordability of water and sewerage charges by domestic customers.

Evidence/Enquiry: Who exactly does the Scottish Executive's affordability scheme assist?

Action/Response: The Commissioner explained the main points of the affordability scheme announced by the Scottish Executive in February 2001. Households in receipt of Council Tax benefit whose water and sewerage charges are above the qualifying threshold will qualify for assistance. The 2001-02 qualifying threshold for customers using both water and sewerage services is £180, with a proportionate threshold for customers using only a single service.

ISSUE: Affordability of water and sewerage charges by non-domestic customers.

Evidence/Enquiry: What can a non-domestic customer with a small shop do to reduce their annual water and sewerage bill of over £800? The shop was not metered and concern was expressed that even if it were, a meter would not reduce the waste water bill.

Action/Response: North of Scotland Water Authority offered to visit the customer to discuss her situation in detail and assess the possible benefits of having a water meter. It was explained that the foul sewage part of the waste water bill would be based on the water consumed through the water meter.

ISSUE: Benefits of having a water meter.

Evidence/Enquiry: If North of Scotland Water Authority needs a fixed level of income from water charges and if the bills of some non-domestic customers are reduced by having a water meter installed, will charge levels not have to rise for customers not metered?

Action/Response: The Commissioner explained that it is true that the water industry in Scotland is predominantly fixed cost (ie costs are not significantly reduced if the number of customers reduces). This means that a level of income has to be maintained. This is one of the reasons why there are no plans to make metering compulsory for domestic customers.

ISSUE: Investment.

Evidence/Enquiry: When will the level of investment which is needed drop?

Action/Response: The Commissioner stated that if it is assumed that the infrastructure has an average life of 50 years, £329 million will need to be spent each year to maintain it.

ISSUE: Reliefs.

Evidence/Enquiry: A customer said that the removal of charitable relief would cost his organisation £80,000 per year. He believes that the consultation process was flawed.

Action/Response: The Commissioner explained that 2% of water authority charges are used to fund charitable reliefs. The Commissioner advised that the decision on how reliefs are funded is one for the Scottish Executive.

ISSUE: Competition.

Evidence/Enquiry: Where does competition come from? If it is from companies currently outside the water sector the

industry is likely to get into a bigger mess than it is in already.

Action/Response: The Commissioner advised that Scottish Gas has said on record that it will invest in the water infrastructure. Electricity and gas bills have gone down since competition was introduced.

ISSUE: Investment.

Evidence/Enquiry: A customer alleged that the three regional councils, Grampian, Tayside and Highland, have been negligent, and have not had a proper investment strategy for the water and waste water services.

Action/Response: The Commissioner was not able to comment on what was done prior to 1996 when North of Scotland Water Authority was formed, but advised that since then there has been steady investment in water and waste water services.

ISSUE: The proposed Scottish Water

Evidence/Enquiry: Why will the North benefit more than the East and West if the authorities are merged?

Action/Response: The Commissioner advised that he took up his post in November 1999, and by October 2000 it was clear to him that North of Scotland Water Authority's problems of high charges could be solved by the creation of Scottish Water and the harmonisation of charges across Scotland.

ISSUE: Taxation.

Evidence/Enquiry: How much VAT and corporation tax is accrued from the water authorities?

Action/Response: The Commissioner advised that the authorities do not pay corporation tax. The North of Scotland Water Authority representative offered to provide the VAT figure. Contractors and PFI partners will pay corporation tax.

ISSUE: Metering.

Evidence/Enquiry: A pensioner with a Band E property expressed concern about the rises in charges, and asked if it would benefit her to have a meter.

Action/Response: The Commissioner explained that there may be a marginal benefit, but the creation of the proposed Scottish Water will prevent charges going up as much as they would have done otherwise.

ISSUE: Metering.

Evidence/Enquiry: Is the ultimate aim to meter all domestic customers?

Action/Response: The Commissioner explained that the fixed element of the cost of services is such a large proportion that metering all domestic customers is not a sensible option.

ISSUE: Metering.

Evidence/Enquiry: The customer only operates his business a few days a week. Would it benefit him to have a water meter installed?

Action/Response: North of Scotland Water Authority will do an assessment for him.

ISSUE: European Union regulations.

Evidence/Enquiry: Do the water authorities get aid from the European Union if they are investing in order to meet European Union regulations?

Action/Response: The Commissioner advised that they do not but that they get fined heavily if they do not comply.

ISSUE: European Union regulations.

Evidence/Enquiry: Why doesn't the European Union fund the necessary improvements?

Action/Response: The Commissioner advised that the money that the European Union has comes from taxes so everyone would be paying anyway.

ISSUE: Timing of consultation.

Evidence/Enquiry: Why has this consultation been held after the decision to increase charges has been made? If the consultation had been earlier people would have had a chance to express their views against the charges increase.

Action/Response: The Commissioner advised that the increases are necessary to cover vital investment. Even if North of Scotland Water Authority met all the efficiency targets the charges would have to double if the proposed Scottish Water were not created.

ISSUE: Affordability.

Evidence/Enquiry: Who benefits from the cap associated with Council Tax benefit? The customer believed that those in Band E properties were not eligible.

Action/Response: People with the right circumstances even in Band H can receive Council Tax benefit, in which case they

will be eligible for their water charges to be capped. The cap for 2001-02 is £180.

ISSUE: Transportation of sludge.

Evidence/Enquiry: How will sludge from Peterhead and Fraserburgh be transported to Nigg? Will the roads become more congested? What will happen to it when it gets to Nigg?

Action/Response: The North of Scotland Water Authority representative explained that the sludge will be transported by tanker and treated at Nigg. It will then be offered to farmers as fertiliser. There will only be six tankers so it should not affect the roads too much.

ISSUE: Method of charging.

Evidence/Enquiry: Why aren't water charges linked to ability to pay, like income tax?

Action/Response: The Commissioner advised that this would be a viable way of charging but it is a political decision.

ISSUE: Charges collection.

Evidence/Enquiry: How much does North of Scotland Water Authority pay Aberdeen City Council for collecting water and waste water charges?

Action/Response: The customer was advised that the cost is £4 per bill. The biggest single cost is collecting unpaid charges. This varies from authority to authority.

Lerwick: 28 June 2001

ISSUE: Shellfish areas.

Evidence/Enquiry: A customer was concerned about the protection of shellfish areas.

Action/Response: The North of Scotland Water Authority representative answered all his questions.

ISSUE: Building costs.

Evidence/Enquiry: What was the cost of the pumping station on Victoria Pier? What was the cost of the building to hide the pumping station?

Action/Response: The North of Scotland Water Authority representative will find this out and inform the customer.

ISSUE: Special deals.

Evidence/Enquiry: A representative from the Fisheries College enquired about the special deal that had been struck

between the fish processors and North of Scotland Water Authority and about discharges that are allowed.

Action/Response: The North of Scotland Water Authority representative gave details.

ISSUE: New sewage treatment works.

Evidence/Enquiry: An enquiry was made about the new sewage treatment works at Hillswick.

Action/Response: The North of Scotland Water Authority representative answered all their questions.

ISSUE: Surface water charges.

Evidence/Enquiry: A customer wanted to know why his bill includes a surface water charge.

Action/Response: It was explained that the surface water charge has only been shown as a separate item on non-domestic bills since 1 April 2000. It used to be incorporated in the unmeasured foul waste water charge. North of Scotland Water Authority is phasing in a measured foul waste water charge over four years, and therefore lists the surface water drainage charge separately. Until the measured waste water charge is fully phased in, the charge listed as surface water drainage will also include a proportion of the foul waste water charge, currently 50%.

Kyle of Lochalsh: 4 July 2001

ISSUE: Charge levels.

Evidence/Enquiry: Why are North of Scotland Water Authority charges so high?

Action/Response: The Commissioner advised that North of Scotland Water Authority charges are higher because of the economics of supplying a predominately rural area – North of Scotland Water Authority covers 60% of the land mass of Scotland yet has only 1.1 million customers. There are 60 metres of water main per customer in the Highlands.

ISSUE: Communication.

Evidence/Enquiry: Why are customers not told how much money the water authorities require to invest?

Action/Response: North of Scotland Water Authority said that they have discussed this issue at public meetings. The Commissioner agreed that the communication of the problem has been poor.

ISSUE: Domestic charging.

Evidence/Enquiry: Why do customers have to pay all the costs of supply through Council Tax bills – why can costs not be paid through income tax?

Action/Response: The Commissioner advised that the use of Council Tax banding is set by law, and that any change would be a political decision.

ISSUE: Increase in charges.

Evidence/Enquiry: Why can't North of Scotland Water Authority charge rises be spread over a longer period?

Action/Response: The Commissioner advised that it would cost customers more in the long term to spread charges further.

ISSUE: Water Industry Commissioner's Office: finance.

Evidence/Enquiry: How much does it cost to fund the Commissioner's office?

Action/Response: The Commissioner advised that the annual cost is £1.4 million.

ISSUE: Water quality.

Evidence/Enquiry: Why is water in Kyle still brown?

Action/Response: The North of Scotland Water Authority representative advised that a new water treatment works will be operational in mid August, which should resolve the problems. The works will initially serve Kyle and will be extended to cover other areas thereafter. Mains renewal work will also be started in Kyle over the next few months. North of Scotland Water Authority offered to show any customers around the new treatment facility.

ISSUE: Water Industry Commissioner.

Evidence/Enquiry: Whose agenda does the Commissioner's office follow – customers, water authorities, the Scottish Executive, etc? Is the Commissioner the equivalent of the Customers Council?

Action/Response: The Commissioner advised that he is responsible for promoting the interests of all customers. The Scottish Water and Sewerage Customers Council, which was dissolved under the Water Industry Act 1999 on 1 November 1999, was the customer watchdog of the three water authorities. The Commissioner assumed these responsibilities together with responsibility for economic regulation of the industry, which had previously been undertaken by the Scottish Office.

ISSUE: Chlorination.

Evidence/Enquiry: Why does chlorine have to be added to water supplies? The customer commented that the water tasted awful and that chlorine levels fluctuated.

Action/Response: The North of Scotland Water Authority representative explained that chlorine is added to kill bacteria to ensure that the water is safe to drink. The customer is served by a new treatment plant at Teangue – the fluctuations in chlorine levels were due to teething problems at the works.

ISSUE: Water quality.

Evidence/Enquiry: Why does my flannel go blue?

Action/Response: The North of Scotland Water Authority representative explained that more acidic water takes copper from pipes and tanks which has a blue colour when it oxidises.

ISSUE: Mains renewal.

Evidence/Enquiry: A customer asked why pipes have not been replaced.

Action/Response: North of Scotland Water Authority will look into the circumstances and respond to the customer.

ISSUE: Metering.

Evidence/Enquiry: Can domestic customers get a water meter?

Action/Response: The North of Scotland Water Authority representative explained that metering may be of benefit to customers in Council Tax bands F, G and H. There is currently a charge for installing a water meter in households in the North of Scotland Water Authority area.

ISSUE: Investment.

Evidence/Enquiry: A customer praised the investment in a new water treatment works and waste water treatment works and therefore did not mind paying increased charges.

ISSUE: Mains renewal contract.

Evidence/Enquiry: Why was Thames Water involved in Plockton mains renewal work?

Action/Response: The North of Scotland Water Authority representative explained that a Thames Water division was North of Scotland Water Authority's contractor in this case.

ISSUE: Asset maintenance.

Evidence/Enquiry: Will there be planned maintenance of the new works?

Action/Response: The North of Scotland Water Authority representative explained that until now the focus had been on building new works rather than maintenance, but there will now be planned proactive maintenance.

ISSUE: Water authority employment.

Evidence/Enquiry: The customer stated that the number of local staff had decreased and asked if this was cost-cutting. The customer was concerned about possible falls in service levels.

Action/Response: The North of Scotland Water Authority representative explained that new plants are more efficient therefore less operational staff are required.

ISSUE: Reinstatement after work.

Evidence/Enquiry: Who is responsible for reinstatement of property following work, North of Scotland Water Authority or its contractors?

Action/Response: The North of Scotland Water Authority representative ensures that reinstatement is done whether by its own staff or a contractor. North of Scotland Water Authority took contact details for the enquirer and will provide further information.

ISSUE: Water quality.

Evidence/Enquiry: The questioner stated that the main cause of E-coli bacteria is cattle faeces and noted that cattle surrounded the local water source. Is there any risk to water quality?

Action/Response: The North of Scotland Water Authority representative explained that the source is fenced off to prevent direct access by cattle. The water firstly dilutes any infection and the addition of chlorine ensures that any bacteria are killed.

ISSUE: Infrastructure lifespan.

Evidence/Enquiry: What is the lifespan of new infrastructure?

Action/Response: The North of Scotland Water Authority representative explained that this varies from a few years for small plant to 100 years for a sewer.

ISSUE: Water quality.

Evidence/Enquiry: A customer complained about high chlorine levels in new supply and commented that many customers had bought water filters. The customer enquired whether North of Scotland Water Authority could subsidise filters.

Action/Response: The North of Scotland Water Authority representative explained that legislation states that water authorities must provide disinfected water. Filters can become a liability if not maintained regularly. North of Scotland Water Authority has to ensure that all water supplied is safe to drink.

ISSUE: Septic tank emptying charges.

Evidence/Enquiry: Septic tank emptying used to be free – why is there now a charge?

Action/Response: The Commissioner advised that the Highland Regional Council used to charge customers for sewerage, whether or not connected to the public sewer, therefore they offered a free emptying service. Charges for septic tank emptying were phased in over a few years and represent the average cost of emptying a septic tank in the North of Scotland Water Authority area. Customers now only pay when they use the service.

ISSUE: Sewage sludge.

Evidence/Enquiry: What happens to sewage sludge from Broadford?

Action/Response: The North of Scotland Water Authority representative advised that the sludge is dewatered and transferred to Inverness for treatment.

Stornoway: 5 July 2001

No members of the public attended this meeting.

Dundee: 7 August 2001

Issue: Communication.

Evidence/Enquiry: Customers feel that there is a lack of communication between North of Scotland Water Authority and its customers.

Action/Response: The Commissioner agreed that North of Scotland Water Authority should make more effort to communicate effectively.

Issue: Charges.

Evidence/Enquiry: Low-income earners cannot afford large increases. What is being done to minimise these increases?

Action/Response: The efficiencies that have been identified by the Commissioner, as well as those available through merging the authorities, will keep increases to a minimum.

Efficiency does not mean just cutting costs, but cutting costs and maintaining service standards, in other words increasing value for money.

Issue: European Union Regulations.

Evidence/Enquiry: Is it not the case that our standards are currently higher than those of other European nations? Various examples were quoted.

Action/Response: The Commissioner advised that currently our standards are still lower than elsewhere in Europe. We still pump untreated sewage into rivers such as the Tay. Residents in the highlands are often perfectly happy with their water, but the product they receive does not meet European Union standards.

Issue: Interest payments.

Evidence/Enquiry: An objection to the payment of interest charges was made.

Action/Response: The Commissioner advised that Government borrowing is necessary to smooth out the peaks in required investment so that charges are relatively constant.

Issue: OAP rebates.

Evidence/Enquiry: Is there not a case for OAPs being exempt from paying charges?

Action/Response: The Commissioner advised that as with all sections of society, there are some people who are more able to fund charges than others. This is a political issue, but currently there are allowances for single occupancy and disability. The current affordability scheme is intended to bring charges down to a more affordable level for those on Council Tax benefit.

Issue: Harmonisation of charges.

Evidence/Enquiry: Should harmonisation of charges not be brought in immediately along with the proposed Scottish Water?

Action/Response: The Commissioner advised that gradual harmonisation will allow customers in the East and West to accommodate the higher charges over time. Gradual harmonisation has been successfully used to bring charges to the same level throughout the North area since the water authorities were created.

Issue: Previous investment.

Evidence/Enquiry: Were previous organisations

incompetent, in that they did not invest enough money?

Action/Response: The Commissioner advised that the local authorities had to balance investment in water services with other demands on their resources, such as schools and housing. Since the authorities were created, there has been an ongoing improvement in investment levels.

Issue: Charitable reliefs.

Evidence/Enquiry: What is likely to happen with reliefs?

Action/Response: The Commissioner advised that reliefs have been extended for a year, when they will be withdrawn, initially by 40%, then 20% per year. The Scottish Council of Voluntary Organisations is in close contact with water authorities to identify which organisations should receive reliefs and how this will be achieved.

Issue: Water quality

Evidence/Enquiry: Is water quality better now than when the local authority was responsible for water services?

Action/Response: The Commissioner advised that water quality is better; however, to achieve this the whole network has to have a residual chlorine effect. This means that certain areas will have a higher level of chlorine than others.

North of Scotland Consultative Committee quarterly reports on members' consultations

1 June 2000–30 September 2000

Groups consulted:

Auchterarder and District Community Council
Dundee and Tayside Chamber of Commerce
Residents of Drumnadrochit at the opening of a new waste water treatment plant
Scottish Council of Voluntary Organisations: Inverness

Issues raised:

- Charges and affordability: Some customers feel that those on low income should not have to pay water and waste water charges.
- There is a lack of understanding about why there has been a large rise in charges.
- Customers in Auchterarder have experienced numerous supply problems.
- Reliefs: There is a bid to return to reduced charges for

charities and voluntary groups.

- Most customers are happy with the quality of their water supply.
- Chlorine taste in the water in properties nearest water treatment plants is a problem.
- New investment to ensure that the water entering Loch Ness is of high quality was welcomed.

Other activities:

- Members attended a public meeting in Inverness called by the local MSP, Mary Scanlon.
- Members attended a conference on the future of the water industry.
- A member visited a North of Scotland Water Authority call centre and a North of Scotland Water Authority laboratory.

1 October 2000–31 December 2000

Groups consulted:

Auchterarder and District Community Council
Dunkeld and Birnam Community Council
Newtonmore Community Council
Residents of Glenlatterach, Elgin at the opening of a new water treatment plant

Issues raised:

- At a follow up meeting customers in Auchterarder discussed their supply problems with a representative from North of Scotland Water Authority.
- Charges and affordability: This is of constant concern.
- Metering: There is a lack of awareness that metering is a possibility, especially among small business customers, even though they are concerned that their bills are very high.
- Most customers are satisfied with the quality of their water and welcome investment in water treatment facilities.

Other activities:

- A member arranged a meeting between the Commissioner and Dundee and Tayside Chamber of Commerce.
- A member attended a public meeting held by North of Scotland Water Authority regarding the Cruden Bay project.
- A member attended a North of Scotland Water Authority board meeting.

1 January 2001-31 March 2001

Groups consulted:

Glencoe and Ballachulish Community Council

Local Business: Forfar

Perth City Centre Tenants and Residents Association

Retail Business: Forfar

Issues raised:

- Fluoridation: This is an unpopular idea.
- There is a lack of awareness of how the water authorities are funded, with many misconceptions that they are subsidised by the Scottish Executive.
- Work delayed by Foot and Mouth Disease: North of Scotland Water Authority has had to reschedule a lot of work, but customers accept that this is necessary.
- The local North of Scotland Water Authority office has resolved a number of individual problems.
- There is a general level of satisfaction with the standard of service from North of Scotland Water Authority. The majority of customers were happy with the service they receive.
- Customers would like the Scottish Executive to be able to afford to go for the enhanced option on the Water Quality and Standards consultation paper, however they realise that the cost may be prohibitive.
- There is a lack of awareness of the option to contact the water authority to claim to be a special case with regards to waste water usage, i.e. putting back less than 95% of what is received.
- One customer complained that the temporary traffic lights used by North of Scotland Water Authority while they are doing mains replacement work are not very reliable. In addition he was dissatisfied with the replacement road surface.
- There is a lack of awareness about why there is a surface water drainage and highway drainage charge.

Other activities:

- A member attended a North of Scotland Water Authority board meeting, and received a presentation from the Highland Movement against Water Fluoridation.

1 April 2001-30 June 2001

Groups consulted:

Adults with learning difficulties and resource centre staff

Arisaig and District Community Council

Auchinblae Church

Citizens Advice Bureau: Nairn

Citizens Advice Bureau: Stornoway

Fettercairn Church

Galvanising Business

Inverasdale Community Council

Inverawe Action Group

Local business, Lerwick

Moray Voluntary Service Organisation: Elgin

Residents of Inverasdale at the opening of the new water treatment plant

Residents of Sleat, Skye

Rural Action: Huntly

Shetland Enterprise

Shetland Fish Processors Association

Voluntary Action: Badenoch and Strathspey

Voluntary Action: Inverness

Voluntary Association of Nairn Groups

Issues raised:

- There is still a misunderstanding about the funding of North of Scotland Water Authority, with many customers believing that it is subsidised by the Scottish Executive.
- People feel that the UK Government interprets European Union directives to a higher standard than other European Union countries.
- Churches are still concerned about the removal of reliefs.
- The people served by the new Inverasdale water treatment plant and mains renewal programme expressed delight at being able to turn on the tap and receive water as the old system was very prone to breakdown. Unusually, those consulted accepted the fact that if they want a good water supply it has to be paid for.
- People in remote areas are unhappy with having to deal with, for example, a call centre in Dundee and believe that local responsiveness has suffered severely since North of Scotland Water Authority was formed. People are concerned that the formation of the proposed Scottish Water will cause this to get worse.

- Customers would like a clearer breakdown of their charges on their bills, and more explanation of the use of rateable values.
- Issues arising from the fish processors meeting:
 - Lack of communication from North of Scotland Water Authority about a new effluent treatment plant that is being built by a local company, but which will be run by North of Scotland Water Authority.
 - The staff in the North of Scotland Water Authority call centre often do not know who to put customers through to so they have to speak to many people before anyone can help them.
 - They feel that North of Scotland Water Authority is trying to force customers to build their own treatment works.
 - Customers feel that it is unfair that they have to pay for the enforcement of European Union directives when they are not enforced in other countries, such as Spain.
 - There is a lack of information on how to get waste water charges reduced when less than 95% of incoming water is returned to the sewer.
 - Customers want to know whether they could negotiate a special deal with North of Scotland Water Authority, as was done in Aberdeen.
 - Customers were unaware that they could apply to the Scottish Environment Protection Agency for a consent to discharge trade effluent themselves.
 - Customers are concerned that the proposed Scottish Water would lead the way to privatisation.
 - Customers felt that North of Scotland Water Authority is trying to make a profit out of the high charges.
 - Customers feel that they are being pushed out of business by North of Scotland Water Authority charges and numerous European Union directives.
- Customers in Lerwick are generally happy with their service from North of Scotland Water Authority and are pleased that their views are taken into account, for example with the site of new pumping stations.
- There is a lack of knowledge about metering among many customer groups.
- Adults with learning difficulties cannot necessarily read notices that are put through the door, for example to advise that the water is going to be switched off. They suggest that a well-advertised logo might help, for example a tap equivalent of a no-smoking sign. They do not always have to pay water charges as they may be classed as mentally

impaired, therefore North of Scotland Water Authority is not aware of them as a customer group, or their needs.

- Chlorine taste is a common complaint that the water authorities are unable to resolve.
- Customers often express concerned about the possibility of fluoridation. There is a strong feeling against this.
- The staff at the North of Scotland Water Authority call centre can be unhelpful if they do not know the answer to a query.

Other activities:

- A member attended the launch of the Assynt water treatment works.
- A member attended the opening of Teangue water treatment works in Sleat, Skye.

1 July 2001–30 September 2001

No report.

West of Scotland Consultative Committee

Location	Date	Number of Invites	Number of Posters	Advert Placed	Number of News Releases	Attendance	Total cost
Inveraray	1/8/00	37	-	Argyllshire Advertiser	1	12	£104
Tobermory	31/8/00	5	-	Oban Times	1	16	£222
Newton Stewart	15/11/00	32	9	Galloway Gazette	1	16	£115
Port Glasgow	30/11/00	24	19	Greenock Telegraph	2	6	£104
Cumbernauld	26/4/01	22	55	Cumbernauld News and Kilsyth Chronicle	2	6	£104
Newton Mearns	10/5/01	15	74	Southside Extra	2	1	£112
Girvan	5/6/01	15	23	Carrick Gazette	2	2	£68
Glasgow	10/7/01	76 plus flyers to 400 voluntary groups	100	East End Independent	5	6	£184
Monkton	9/8/01	22	80	Ayrshire Post	4	13	£133
Airdrie	6/9/01	43	66	Airdrie and Coatbridge Advertiser	4	9	£161
Gretna	19/9/01	36	51	Annandale Observer	2	11	£84
Total		327	768		26	98	£1391

Invitations to these meetings were issued to:

- Activity & Resource Centre, Arran
- Airdrie and District Club for Adult Disabled
- Airdrie Helping Hands
- Allanton & Hartwood Community Council
- Alloway & Doonfoot Community Council
- Anderston Community Council
- Annandale and Eskdale Council for Voluntary Service
- Arden, Carnwadric, Kennishead & Old Darnley Community Council
- Ardrishaig Community Council
- Argyll and Bute Countryside Trust
- Argyll and Bute Council Members
- Argyll CVS
- Arrochar & Tarbet Community Council
- Auchinloch Community Council
- Auchmountain Community Council
- Avich and Kilchrenan Community Council
- Axis People First
- Ayrshire Chamber of Commerce & Industry

- Baillieston Community Council
- Balgrayhill Community Council
- Ballantrae Community Council
- Balloch/Eastfield Community Council
- Banton & Kelvinhead Community Council
- Barr Community Council
- Barrhead Community Council
- Barrhill Community Council
- Bellshill Community Council
- Belmont & Kincaidson Community Council
- Blairardie, Old Drumchapel Community Council
- Bow Farm Community Council
- Braeside/Branchton Community Council
- British Red Cross
- Brockburn Community Council
- Broomhill Community Council
- Broomhouse Community Council
- Brydekirk and District Community Council
- Busby Community Council
- C.A.N, Girvan
- C.V.O in Kyle & Carrick

Cairndow Community Council
Cairnhill Community Council
Cairnryan Community Council
Caldercruix O.A.P. Voluntary Group
Carbrain & Hillcrest Community Council
Cardwell Bay Community Council
Care and Repair in Dumfries and Galloway
Carfin Community Council
Carlton, Bridgeton Community Council
Carmunnock Community Council
Carmyle Community Council
Cartsdyke Community Council
Castlecary Community Council
Cathcart & District Community Council
Central Wishaw Community Council
Chamber of Commerce, Tobermory
Chryston Community Council
Citizen Advocacy Support Services
Citizens Advice Bureaux
Clarkston Community Council, Airdrie
Clarkston Community Council, Newton Mearns
Claythorn Community Council
Coatbridge Citizens Advice Bureau
Colmonell & Lendalfoot Community Council
Coltness Community Council
Community Link, Airdrie
Community Support Services, Port Glasgow
Condorrat Community Council
Corkerhill & District Community Council
Council For Voluntary Services North Ayrshire
Counselling Action, Prestwick
Counselling Ayrshire
Cowdenknowes Community Council
Coylton Community Council
Craigie Community Council
Craignish Coastal Forum
Craignish Community Council
Craignure Tourist Office
Cree Valley Community Council
Cree Valley Community Woodlands
Crosshill, Straiton & Kirkmichael Community Council
Crosshill/Govanhill Community Council
Croy Community Council
Cummertrees and Cummertrees West Community Council
Dailly Community Council
Dalmarnock Community Council
Dalton and Carrutherstown Community Council
Darnley Estate Community Council
Delletts Angling Club
Dennistoun Community Council
Disabled Trust for Scotland
Drumchapel Community Council
Drumoyne Community Council
Dullatur Community Council
Dumbreck Community Council
Dumfries & Galloway Chamber of Trades & Commerce
Dumfries and Galloway Council Members
Dunadd Community Council
Dundonald Community Council
Dunure Community Council
Eaglesham Community Council
East Renfrewshire Council Members
Eastriggs Dornock & Creca Community Council
Enable Services, Airdrie
Enable, Mid Argyll
Federation of Small Businesses
Forgewood Community Council
Fort & Seafield Community Council
Foxbar Welfare Rights Group
Furnace Community Council
Garnethill Community Council
Garrowhill Community Council
Gartcosh Community Council
Gartcraig Community Council
Gartlea Community Council
Germiston Community Council
Gibshill/Weir Street Community Council
Giffnock Community Council
Glasgow Chamber Of Commerce
Glasgow City Council Members
Glenboig Community Council
Glencairn Community Council
Glenorchy and Innishael Community Council
Govan Community Council
Govan East Community Council
Greengairs Community Council
Greenock Central Community Council
Greenock (Larkfield) Community Council
Gretna & Rigg Community Council
Grieve Road/Fancy Farm Community Council

Hallcraig Centre
 Harthill & Eastfield Community Council
 Hillhead Community Council
 Hillington, North Cardonald & Penilee Community Council
 Hoddom and Ecclefechan Community Council
 Hole Farm Community Council
 Holiday Mull Group
 Hurler Community Council
 Hutchesontown Community Council
 Ibrox Cessnock Community Council
 Inveraray Community Council
 Inveraray Senior Citizens
 Inverclyde Community Development Trust
 Inverclyde Council Members
 Inverclyde Council on Disability
 Inverclyde Voluntary Council of Social Service
 Inverclyde Voluntary Sector Forum
 Inverkip Community Council
 Isle of Mull Community Council
 Isle of Whithorn Community Council
 Johnstone Community Council
 Jordanhill Community Council
 K.I.N.D Childrens Centre
 Kelvin North Community Council
 Kelvindale Community Council
 Kelvinside Community Council
 Kildrum Community Council
 Kilmalcolm Community Council
 Kilsyth Community Council
 King's Park & Croftfoot Community Council
 Kinning Park Community Council
 Kirkcolm Community Council
 Kirkcowan Community Council
 Kirkintilloch Community Council
 Kirkmabreck Community Council, Creetown, Newton Stewart
 Kirkmaiden Community Council
 Kirkpatrick Juxta Community Council
 Kirkpatrick Fleming & District Community Council
 Kirtle & Eaglesfield Community Council
 Knightswood Community Council
 Knightswood/North Templar Community Council, Glasgow
 Ladywell Community Council
 Lanarkshire Association for Mental Health
 Lanarkshire Chamber Group
 Laurieston Community Council
 Leswalt Community Council
 Levern District Community Council
 Loans Community Council
 Lochgilphead Centre Council
 Lochgilphead Community Council
 Lochgoil Community Council
 Lockerbie and District Community Council
 Luce 2000
 Luing Tenants & Residents Association
 Mull and Iona Tenants and Residents Association
 Machars Action Ltd
 Maidens & Kirkoswald Community Council
 Mansewood & Hillpark Community Council
 Maybole Community Council
 Mearns Community Council
 Merchant City Community Council
 Middlebie and Waterbeck Community Council
 Milton Community Council
 Moffat and District Community Council
 Molendinar Community Council
 Money Solutions (Scotland)
 Monkland Glen Community Council
 Monklands Association for Voluntary Services
 Monkton Community Council
 Moodiesburn Community Council
 Mossburn Animal Centre
 Mossspark Community Council
 Mount Florida Community Council
 Mount Vernon Community Council
 Muirhouse & Flemington Community Council
 Mull & Iona Community Trust
 Neilston Community Council
 New Luce Community Council
 New Stevenston Community Council
 Newarthill Community Council
 Newlands & Auldhouse Community Council
 Newmains & District Community Council
 Newton & Heathfield Community Council
 North Ayr Resource Centre
 North Knapdale Community Council
 North Lanarkshire Council Members
 Oatlands Community Council
 Ochtreure and Belmont Community Council
 Old Gourrock Community Council
 Old Luce Community Council

Overtown & Waterloo Community Council
 Parkhouse Community Council
 Partick Community Council
 Petersburn & Craigneuk Initiative
 Pinwherry Community Council
 Plains Community Council
 Plains Countryside Park
 Pollock Community Council
 Pollock North Community Council
 Pollockshaws/Eastwood Community Council
 Pollockshields Community Council
 Port Glasgow (Central West) Community Council
 Port Glasgow (Lower East) Community Council
 Port Glasgow (Upper West) Community Council
 Port William and District Community Council
 Portpatrick Community Council
 Possilpark Community Council
 Prestwick North Community Council
 Prestwick South Community Council
 Quarrier's Homes
 Queenzieburn Community Council
 Rhins North Community Council
 Rhins South Community Council
 Richmond Fellowship Scotland
 Rotary Clubs
 Royal Burgh of Lochmaben and District Community Council
 Royal Burgh of Whithorn and District Community Council
 Ruchill Community Council
 Safe North Ayr
 Salsburgh Community Council
 Scotstoun Community Council
 Scottish Environment Protection Agency
 Scottish Womens Rural Institute
 Senior Citizens Association, Cumbernauld
 Shawlands & Strathbungo Community Council
 Shotts Community Council
 Simshill/Old Cathcart Community Council
 South Ayrshire Council Members
 South Knapdale Community Council
 Springboig Community Council
 Springburn Community Council
 Springfield and Gretna Green Community Council
 Stamperland & Netherlee Community Council
 Stepps & District Community Council
 Stoneykirk Community Council

Strachur Community Council
 Stranraer East Community Council
 Stranraer South Community Council
 Swinton Community Council
 Symington Community Council
 Tarbet and Skipness Community Council
 Taynuilt Community Council
 The Royal Burgh of Wigtown and District Community
 The Royal Four Towns Community Council
 Thornliebank Community Council
 Thornwood Community Council
 Toryglen Community Council
 Townhead Community Council
 Troon Community Council
 Uplawmoor Community Council
 Upper Gourock Community Council
 Village Community Council, Cumbernauld
 Volunteer Action (Dumfries & Galloway)
 Wallacewell Community Council
 Wamphray Community Council
 Waterside Community Council
 Waverly Community Council
 Wellhouse Community Council
 Wemyss Bay Community Council
 West Loch Fyne Community Council
 Westerwood Community Council
 Westfield Community Council
 Whiteinch Community Council
 Woodlands & Park Community Council
 Woodside Community Council
 Yoker South Community Council
 Yorkhill & Kelvingrove Community Council

Issues raised at each meeting

Inveraray: August 2000

ISSUE: Retention of large customers.

Evidence/Enquiry: Where else could they go?

Action/Response: The example of Scottish Courage was given. It was explained that if many large customers left the public supply it would cause charges to rise.

ISSUE: Efficiencies.

Evidence/Enquiry: Where will they come from?

Action/Response: An explanation of benchmarking against best practise was given. The Commissioner has not dictated the way the authorities tackle the targets.

ISSUE: Guaranteed Minimum Standards.

Evidence/Enquiry: Why do these not cover water quality?

Action/Response: The Commissioner advised that this is an issue for the Scottish Environment Protection Agency and the Scottish Executive. Examples of how West of Scotland Water Authority has improved water quality were given.

ISSUE: Chlorination.

Evidence/Enquiry: Customers complained of a strong taste in Furnace and Kilcrennan.

Action/Response: The West of Scotland Water Authority representative explained that work at the Kilcrennan treatment works should alleviate the problem. Chlorination is necessary to comply with European Union regulations, but no water supply is safe unless it is treated.

ISSUE: Asbestos.

Evidence/Enquiry: Customers were concerned about the possibility that there is asbestos in the water main in Kilcrennan.

Action/Response: The West of Scotland Water Authority representative advised that the water is perfectly safe to drink. However, the main is prone to collapse so investment is needed.

ISSUE: Inadequate response from West of Scotland Water Authority.

Evidence/Enquiry: A customer has had communication over four years on a variety of issues without successful resolution.

Action/Response: This will be personally dealt with by West of Scotland Water Authority representative, and monitored by the Commissioner.

ISSUE: Price rises.

Evidence/Enquiry: Why were they necessary?

Action/Response: An explanation was given of why charges have risen sharply, and how efficiencies should prevent such steep rises in the future. The Commissioner's Strategic Review of Charges, to be submitted during late 2001, will set the cap on the water authorities' revenue until 2006.

ISSUE: Chief Executives' salaries.

Evidence/Enquiry: Are three figure sums justified?

Action/Response: The Commissioner advised that they are set by the Scottish Executive and are less than in England and Wales. Performance-related remuneration is being looked at. It is vital to attract high-quality staff to these top management positions.

ISSUE: Taynuilt water supply.

Evidence/Enquiry: Why is it necessary to change it? Will there be consultation?

Action/Response: The West of Scotland Water Authority representative explained that increased population is stretching the existing supply. No new development will be possible if there is not a good enough supply. The quality of the supply to existing customers may also suffer. There will be consultation on the future possibilities.

Tobermory: 31 August 2000

ISSUE: Communication.

Evidence/Enquiry: Mull Community Council has not been kept in touch about plans for a new sewage treatment works.

Action/Response: West of Scotland Water Authority apologised for the lack of information and explained that its usual policy is to keep local residents informed. West of Scotland Water Authority will provide an update and details of the consultation process.

ISSUE: Competition.

Evidence/Enquiry: Do customers really have a choice?

Action/Response: The Commissioner advised that competitors have contacted 15 of West of Scotland Water Authority's top customers. At the moment there is no choice for domestic, or small business customers, but as in other utilities this is likely to come with time.

ISSUE: Water pressure.

Evidence/Enquiry: Pressure is low in Dervaig. There was concern that it may be too low for fire fighting.

Action/Response: The West of Scotland Water Authority representative advised that work is being done to address areas with low pressure problems.

Newton Stewart: 15 November 2000

ISSUE: Chlorination.

Evidence/Enquiry: Water supply improvements have resulted in a chlorine taste.

Action/Response: The West of Scotland Water Authority representative explained that chlorination is necessary to comply with European Union directives. Unfortunately, properties close to the water treatment works will have some chlorine taste.

ISSUE: Water pressure.

Evidence/Enquiry: Pressure has dropped since the water supply improvements.

Action/Response: The West of Scotland Water Authority representative advised that there is currently no minimum standard for water pressure, but the usual aim is to be able to fill a storage tank on the first floor of a building.

Port Glasgow: 30 November 2000

ISSUE: Infrastructure upgrading.

Evidence/Enquiry: A recent upgrade had significantly disrupted Gourock and it was felt that trade to the town had been lost as a result. This had not happened in Greenock. Also objections to the planned upgrade had been ignored.

Action/Response: Apologies were given by the West of Scotland Water Authority representative but it was stressed that the work was necessary. The history of lack of investment in the Scottish water infrastructure means that much of it is in danger of collapse and failure.

ISSUE: The smell and appearance of the waste water treatment works.

Evidence/Enquiry: It was requested that lids be put on the tanks at Underhugh treatment works.

Action/Response: It was explained that due to new treatment processes this is usually considered to be unnecessary, but that West of Scotland Water Authority will monitor the smell.

Cumbernauld: 26 April 2001

ISSUE: High charges.

Evidence/Enquiry: Why are water bills so high when we have so much rain?

Action/Response: It was explained that the cost of treatment and maintenance of the infrastructure was still high, but that increased efficiency will help to minimise any further increases.

ISSUE: Industry structure.

Evidence/Enquiry: Why is Cumbernauld served by both East and West of Scotland Water Authorities?

Action/Response: West of Scotland Water Authority advised that historically Cumbernauld was served by different local authorities for its water and waste water services. The infrastructure is still the same.

ISSUE: Burst pipe in a customer's garden.

Evidence/Enquiry: The customer has been complaining for four weeks.

Action/Response: West of Scotland Water Authority will look into it and respond to the customer directly.

ISSUE: Efficiency targets.

Evidence/Enquiry: Concerns were expressed about how these will be met, and the time scale.

Action/Response: The Commissioner advised that the targets are realistic because they are based on benchmarking. He has not dictated the way the authorities tackle the targets. Examples can be found in England and Wales of dramatic increases in efficiency being achieved in many different ways.

Newton Mearns: 10 May 2001

ISSUE: Role of the Commissioner and the Consultative Committees.

Evidence/Enquiry: A customer requested more information.

Action/Response: There was a general discussion about these issues. It was agreed that a Consultative Committee member would make an appointment to speak to the local community council.

Girvan: 5 June 2001

ISSUE: Efficiency targets.

Evidence/Enquiry: £60 million of savings in operating expenditure is significant; how will it be achieved?

Action/Response: The Commissioner has not dictated the way the authorities tackle the targets. Examples can be found in England and Wales of dramatic increases in efficiency being achieved in many different ways.

ISSUE: Efficiencies.

Evidence/Enquiry: What will be the impact on employees?

Action/Response: The Commissioner advised that savings will be made by bringing the three water authorities together at management level. Spend to Save investment will help West of Scotland Water Authority to make future efficiencies.

ISSUE: Source of Girvan water.

Evidence/Enquiry: Where does the water supplied to Girvan come from?

Action/Response: The West of Scotland Water Authority representative advised that it all comes from the Penwhapple Reservoir.

ISSUE: Difficulty in getting advice when main for Loch Braden burst.

Evidence/Enquiry: West of Scotland Water Authority could not provide information about when the water would run out so it was difficult to make a decision about when to close the school.

Action/Response: The West of Scotland Water Authority representative explained that plans were inaccurate. These are being updated as mains rehabilitation is being done. West of Scotland Water Authority could now give accurate information. Lists are now held of priority customers to contact during major incidents.

ISSUE: Water quality.

Evidence/Enquiry: How do you define water quality if Highlands water is the worst in the UK?

Action/Response: The West of Scotland Water Authority representative explained that water quality is defined by compliance levels with European Union directives, and to what level it is treated. Treatment facilities in the Highlands are inferior to those in other parts of the UK.

ISSUE: Taste of water.

Evidence/Enquiry: Water in Girvan tastes 'stale' – will it improve?

Action/Response: The West of Scotland Water Authority representative explained that new treatment of water has improved quality but changed taste and smell of the water. Once refurbishment of mains is completed, chlorine levels should be reduced. This should improve the taste.

ISSUE: Selling water.

Evidence/Enquiry: Can Scotland sell water to England?

Action/Response: The Commissioner advised that this is not feasible. The authorities would need an infrastructure capable of dealing with this. Transportation costs would be phenomenal.

ISSUE: Metering.

Evidence/Enquiry: Should water meters be installed in houses to encourage us to save water?

Action/Response: The Commissioner advised that in the short term it is not politically viable.

ISSUE: Charges.

Evidence/Enquiry: Why should someone in Band A pay less than someone in Band D for water?

Action/Response: The Commissioner advised that this is a political decision.

ISSUE: Metering.

Evidence/Enquiry: Would it be better to have a meter?

Action/Response: The West of Scotland Water Authority representative advised that it depends on the property you live in and your personal circumstances. For example, someone living alone in a Band H property is very likely to be better off with a water meter.

ISSUE: Shared supplies.

Evidence/Enquiry: A customer shares their supply with two other houses. Is there a policy regarding this?

Action/Response: The West of Scotland Water Authority representative advised that all new houses will have their own supply.

ISSUE: Pressure.

Evidence/Enquiry: How will scouring of mains effect pressure?

Action/Response: The West of Scotland Water Authority representative advised that mains condition will be better, but this doesn't mean pressure will get better.

ISSUE: Lead pipes.

Evidence/Enquiry: How could a customer replace lead pipe?

Action/Response: The West of Scotland Water Authority representative advised that the water authority will replace their part up to the boundary of the property if the customer replaces their supply pipe.

ISSUE: Water quality and metering.

Evidence/Enquiry: A Masonic lodge has very poor water supply. It is supplied by a 2" pipeline coming off the main. The customer has been in touch with the water authority to complain about the amount of water that has to be run before water runs clear. The lodge has a meter so this water is being wasted and paid for.

Action/Response: The West of Scotland Water Authority representative will investigate the issue and report back to the customer.

ISSUE: Smell from treatment works.

Evidence/Enquiry: Very bad sewage smells in Girvan.

Action/Response: West of Scotland Water Authority will investigate the problem and advise the customer.

Glasgow: 10 July 2001

ISSUE: Efficiencies.

Evidence/Enquiry: Is it not wrong to talk about cost savings when there has been so much under-investment?

Action/Response: It was explained that as costs are reduced the money available for investment will go up. Examples of the efficiency savings that have been made in England and Wales were given.

ISSUE: Pollution.

Evidence/Enquiry: When will beaches be clean?

Action/Response: The Commissioner advised that the Urban Waste Water Treatment Directive requires all waste water to be treated before being discharged into the sea by 2005.

ISSUE: Lead pipes.

Evidence/Enquiry: Will there be investment to replace lead pipes?

Action/Response: The West of Scotland Water Authority representative advised that the water authority will replace their part up to the boundary of the property if the customer replaces their supply pipe.

ISSUE: Investment priorities.

Evidence/Enquiry: What will the investment go into?

Action/Response: It was explained that the Commissioner cannot prescribe where investment goes, but that projects are prioritised using criteria such as the need for compliance with directives, and the current state of particular parts of the infrastructure.

ISSUE: Water quality and reliability of supply.

Evidence/Enquiry: The customer has had supply interruptions ten times since Easter 2000, some of which have lasted days. The water is also of poor quality.

Action/Response: The customer was advised that his area is supplied from Loch Katrine and is at the end of the pipeline. The recent increase in the popularity of combination boilers and power showers means that there is a huge demand on the system at peak times.

ISSUE: New developments.

Evidence/Enquiry: What influence does West of Scotland Water Authority have when new houses are built?

Action/Response: The West of Scotland Water Authority representative advised that West of Scotland Water Authority used to insist that a storage tank was installed, but now they can only recommend it.

ISSUE: Water storage.

Evidence/Enquiry: A customer has storage rather than a combination boiler but still has a problem.

Action/Response: The West of Scotland Water Authority representative advised that the storage tank may not be big enough. There should be 50 gallons for each toilet.

ISSUE: Water pressure.

Evidence/Enquiry: What are West of Scotland Water Authority doing to improve the water pressure?

Action/Response: The West of Scotland Water Authority representative advised that they are looking at ways of rezoning

the mains. They are also going to cut back the supply to some areas that have very high pressure in order to help the areas with very low pressure.

ISSUE: Customer contact.

Evidence/Enquiry: How will West of Scotland Water Authority check that the supply to residents has really improved?

Action/Response: They put data-gathering equipment into the system, and will keep in touch with customers.

ISSUE: Sewage flooding.

Evidence/Enquiry: In July 2000 Byres road was flooded to a depth of three feet with sewage. West of Scotland Water Authority did not clean up, or take any action until a public meeting was called in November 2000. Communication from West of Scotland Water Authority was very poor.

Action/Response: The West of Scotland Water Authority representative gave an explanation of the cause of the flood – concrete causing a blockage. He will speak directly to the customers about it.

ISSUE: Flooding.

Evidence/Enquiry: How fast does West of Scotland Water Authority respond to flooding emergencies?

Action/Response: The West of Scotland Water Authority representative advised that it depends on the scale of the emergency, but that they would usually respond within a matter of hours.

ISSUE: Recurring problems.

Evidence/Enquiry: When a customer calls to report a recurring problem they are often told that it has not been reported before. This is very frustrating.

Action/Response: The West of Scotland Water Authority representative advised that this information will be taken back to the call centre and the system will be improved.

ISSUE: Sewer quality.

Evidence/Enquiry: Do we need better sewers and better mechanisms to check that they are working properly?

Action/Response: The Commissioner confirmed that much of the infrastructure needs to be upgraded.

ISSUE: Communication with customers.

Evidence/Enquiry: Customers are concerned about poor communication and unhelpful call centre staff.

Action/Response: The West of Scotland Water Authority representative advised that they try to be as helpful as possible during specific incidents. The customer will look through the Code of Practice and liaise with West of Scotland Water Authority.

ISSUE: Gases in the sewer.

Evidence/Enquiry: If water gets into the sewer can it release gasses? The customer has called the gas company and been told that the smell was due to water getting into the sewer.

Action/Response: The West of Scotland Water Authority representative advised that it is possible to get gases in the sewer, but if you smell gas you should always call the gas company.

ISSUE: Lead pipes.

Evidence/Enquiry: What is the policy on lead pipe replacement?

Action/Response: The West of Scotland Water Authority representative advised that if a customer replaces their supply pipe the water authority will replace the rest.

ISSUE: Lead pipes.

Evidence/Enquiry: Why is it not possible to get a grant to have the lead pipes replaced?

Action/Response: The Commissioner advised that any grants come from the council, and it is up to them how they are awarded. West of Scotland Water Authority is happy to test the water at the customer's property.

ISSUE: Committee meetings.

Evidence/Enquiry: When is there going to be a meeting in the West End of Glasgow?

Action/Response: The programme of future meetings was outlined. The customer was representing a community council so a Consultative Committee member will attend one of their meetings and will also arrange for West of Scotland Water Authority to be represented.

Monkton: 9 August 2001

ISSUE: Investment.

Evidence/Enquiry: Where does the money come from for all the modernisation?

Action/Response: The Commissioner advised that the money comes from charges and debt. At the moment the debt is growing faster than it can be serviced. This is why efficiencies are so important.

ISSUE: Investment.

Evidence/Enquiry: Are we paying now for the future?

Action/Response: The Commissioner advised that we are paying for the whole service. We cannot afford to borrow any more.

ISSUE: Harmonisation of charges.

Evidence/Enquiry: It is unfair that customers in the West and East of Scotland do not benefit from the efficiencies.

Action/Response: The Commissioner advised that it is important to harmonise charges as quickly as possible so that everyone pays a fair charge.

ISSUE: Privatisation.

Evidence/Enquiry: Is the industry being privatised?

Action/Response: The Commissioner advised that there are no plans to privatise the industry but competition will enable private companies to enter the market.

ISSUE: Metering.

Evidence/Enquiry: Are there plans to charge domestic customers by meter?

Action/Response: The Commissioner advised that there is no case for this because most of the cost of delivering the service is fixed; the volume of water delivered only has a marginal impact.

ISSUE: Charging.

Evidence/Enquiry: Will there be a change in the use of Council Tax bands to charge domestic customers?

Action/Response: The Commissioner advised that this would be a decision for the Scottish Executive, but consultation has shown that the Council Tax band method should stay.

ISSUE: Consultative Committees.

Evidence/Enquiry: How are the Consultative Committees

advertised? Could information be put in with the Council Tax bills?

Action/Response: The Commissioner advised that the meetings in public are advertised in the local press and invitations are sent to local councillors, community councils and voluntary organisations. Posters are sent to local public places such as post offices, supermarkets and leisure centres. The Committee members also write to groups asking for time to consult with them. The water authorities are only allowed to put one piece of paper in with the Council Tax bill.

ISSUE: Function of the Consultative Committees.

Evidence/Enquiry: Are they taking over the role of the local authority members?

Action/Response: The Commissioner advised that their function is to speak to as many people as possible about their water and waste water service and then report back to him. The local authority still has responsibility for water in terms of consumer protection, environmental health etc.

ISSUE: Customer service.

Evidence/Enquiry: A customer had a water leak and called West of Scotland Water Authority who informed them that there was an emergency in Mauchline and that they would get back to the customer. They did not get back in touch for three days (Friday-Monday).

Action/Response: West of Scotland Water Authority apologised and admitted that this is not acceptable. They have 24-hour cover for the repair of public water mains but not for private plumbing.

ISSUE: Lack of security.

Evidence/Enquiry: A member of Newton Heath Community Council expressed surprise at the lack of security at water authority premises.

Action/Response: The West of Scotland Water Authority representative said that they do have a problem with vandalism and graffiti at some premises and some premises have flood lighting and CCTV cameras. He will pass on the concerns to the local office.

ISSUE: West of Scotland Water Authority property.

Evidence/Enquiry: When will old West of Scotland Water Authority buildings be taken down?

Action/Response: The West of Scotland Water Authority representative advised that the building in question belongs to the council, not to West of Scotland Water Authority.

ISSUE: Plumbing and insurance services.

Evidence/Enquiry: A customer had received mail shots from West of Scotland Water Authority about plumbing and insurance services. Does West of Scotland Water Authority endorse these?

Action/Response: The West of Scotland Water Authority representative advised that it was a business decision of West of Scotland Water Authority's to work with customers to ensure that they have plumbing services in place and providing advice on looking after plumbing.

ISSUE: Efficiencies.

Evidence/Enquiry: Is it true that the only way to achieve the efficiencies is by cutting staff by 60%?

Action/Response: The Commissioner advised that this has not been necessary elsewhere in the water industry. Welsh Water, which is the least efficient, has cut most jobs, and the two or three most efficient companies have cut least jobs.

ISSUE: Agricultural run-off.

Evidence/Enquiry: What is going to be done to tackle run-off from agricultural land?

Action/Response: West of Scotland Water Authority intends to work with other agencies, for example the Scottish Environment Protection Agency, to address this.

ISSUE: Inaccurate information.

Evidence/Enquiry: Customers received letters saying that work was going to be done, but the water was never turned off and the work was not done. The telephone number on the letter was incorrect.

Action/Response: The West of Scotland Water Authority representative apologised for any inconvenience caused.

ISSUE: Water quality.

Evidence/Enquiry: Why are there black deposits in customers' washing machines and kettle, and why did they get worse after work was done on the mains?

Action/Response: The West of Scotland Water Authority representative will look into the problem and report back to the customer.

ISSUE: Supply interruption.

Evidence/Enquiry: Why was the supply interrupted in June?

Action/Response: The West of Scotland Water Authority

representative advised that there was a problem with the Braden supply. Work was done to correct it but it failed. Precautionary letters were issued warning of a supply interruption, but they did not need to turn off the supply. Further work is still needed but hopefully without supply interruption.

Airdrie: 6 September 2001

ISSUE: Supply interruption.

Evidence/Enquiry: Residents were only given one hour's notice of the water being cut off first thing in the morning.

Action/Response: The West of Scotland Water Authority representative will look into the complaint and to get back to the community council.

ISSUE: Flooding of roads.

Evidence/Enquiry: Work on the A71 caused water to rise further down the road the next day. It is still flooding.

Action/Response: The West of Scotland Water Authority representative will look into the complaint and to get back to the community council.

ISSUE: Flooding of houses.

Evidence/Enquiry: A customer had been flooded twice and West of Scotland Water Authority has cleaned up twice. The customer wanted to know what West of Scotland Water Authority is doing to deal with the problem, and when any work would start.

Action/Response: The West of Scotland Water Authority representative advised that West of Scotland Water Authority is working with the local council and doing a drainage study with regular inspections of the drains. Any work will possibly start in 2005.

ISSUE: Flooding of houses.

Evidence/Enquiry: Will the problem get worse as new houses are built? The customer felt that priority should be given to customers who have had their houses flooded and then deal with flooded roads.

Action/Response: The West of Scotland Water Authority representative will look into this specific case more closely and contact the customer directly.

ISSUE: Flooding.

Evidence/Enquiry: A customer complained that they knew of an elderly lady whose flat had been flooded three times in a year with both water and sewage. They were told that nothing would be done until 2003-04. Also some shops cannot get insurance because of the flooding.

Action/Response: The West of Scotland Water Authority representative will look into this case and visit the customer to establish whether there are any temporary measures that can be put in place.

ISSUE: Poor customer relations from West of Scotland Water Authority.

Evidence/Enquiry: A local councillor complained of constant flooding on Cairnhill Road, and that West of Scotland Water Authority has not cleaned up. He advised that West of Scotland Water Authority denies responsibility and gives very poor responses to its customers. He maintained that the PR in Airdrie is disgraceful, that local representatives are treated badly and that West of Scotland Water Authority act as though they are a private company rather than in the public sector.

Action/Response: The West of Scotland Water Authority representative asked the customer for details of the poor responses so that they can be investigated further. He will also look into the lack of a clean up and respond to the customer.

ISSUE: Maintenance of West of Scotland Water Authority property.

Evidence/Enquiry: West of Scotland Water Authority is not maintaining its sewage treatment works properly. There are no lights and there is concern for neighbouring properties.

Action/Response: The West of Scotland Water Authority representative will look in to this further and contact the customer.

ISSUE: West of Scotland Water Authority Board members.

Evidence/Enquiry: One member of the audience asked the Commissioner to note his complaint about West of Scotland Water Authority. He complained that customers do not have contact with Board members of West of Scotland Water Authority. He believes that Board members live in 'ivory towers' while charges are going up, adding that lots of small problems could be solved quite cheaply but no action is taken.

Action/Response: The Commissioner noted the comments.

ISSUE: Communication.

Evidence/Enquiry: A member of the audience commented on the lack of communication by West of Scotland Water Authority.

Action/Response: The comment was noted.

ISSUE: Flooding of roads.

Evidence/Enquiry: A member of the audience commented that local roads were being eroded by water running down them.

Action/Response: The comment was noted.

Gretna: 19 September 2001

ISSUE: New development.

Evidence/Enquiry: What money is available to upgrade a small waste water treatment works to allow new housing development? Are there funds available for the unexpected work?

Action/Response: The Commissioner explained that the capital programme can respond to changing investment needs, but there is not money available for all unexpected work.

ISSUE: Water quality.

Evidence/Enquiry: The Consultative Committee member asked if customers are happy with the quality of their water.

Action/Response: All the customers present confirmed that they were happy.

ISSUE: Water quality.

Evidence/Enquiry: Why do so many people drink bottled water if our water is so good? Is it because it is not good enough?

Action/Response: The West of Scotland Water Authority representative advised that the tap water is of very good quality and meets all the required standards.

ISSUE: Water pressure.

Evidence/Enquiry: Why has the water pressure dropped following work on the mains and the development of some new houses?

Action/Response: The West of Scotland Water Authority representative will get somebody to visit the customer and investigate the problem.

ISSUE: Customer service standards.

Evidence/Enquiry: The Consultative Committee member asked whether customer service standards are being met when customers contact West of Scotland Water Authority with problems.

Action/Response: All the customers present confirmed that they had received a good service.

ISSUE: Smell of waste water treatment works.

Evidence/Enquiry: Why does the Gretna waste water treatment works smell? The customer lives two miles away from it and can smell it.

Action/Response: The West of Scotland Water Authority representative said that the number of complaints about it has come down but he will investigate the problem again. He asked a community council member to encourage people to contact West of Scotland Water Authority and log the complaint so that they can get an accurate picture of the problem.

ISSUE: Smell of waste water treatment works.

Evidence/Enquiry: Why do some waste water treatment works smell more than others?

Action/Response: The West of Scotland Water Authority representative explained that it depends on how much of the works' capacity is used. If a works is being used under or over its optimum capacity it can smell. Tankers going in and out of works can also cause smells.

ISSUE: Metering.

Evidence/Enquiry: What is the situation with water meters? It is unfair that a single person has to pay the same amount as a household of five or six people.

Action/Response: The Commissioner explained that you are paying for the ability to turn on the tap and get water, not the actual water. The distribution costs of water are proportionally much higher than they are for electricity or gas: water 50%, electricity 1%, gas 5%. This is why metering is standard practice for electricity and gas. Meters have a different role in South East England where there is a shortage of water. A single person can get a 25% discount on their bill. The water authority advised that in Dumfries and Galloway there are only two domestic customers with meters. Both of these are single people living in Band H properties. They are slightly better off with a meter. All domestic customers can have a water meter if they want one, but there are no plans to make it compulsory.

ISSUE: Charges.

Evidence/Enquiry: How is it justified that two people in a Band D house pay more for their water than six people in a Band A house?

Action/Response: The Commissioner advised that this is social policy and therefore a political issue. There was a discussion about the history of charging for water and the history of the Poll Tax and Council Tax.

ISSUE: Cost of building water.

Evidence/Enquiry: Why is it so expensive to get building water when building houses?

Action/Response: The Commissioner explained that you are paying for the cost of supply rather than for the actual water. Water is predominantly a fixed cost commodity, but it is charged on a variable cost basis.

ISSUE: Interruptions to supply.

Evidence/Enquiry: Is there any compensation available for loss of trade when the water supply is interrupted? The customer also commented that in their experience West of Scotland Water Authority has always been very helpful.

Action/Response: The West of Scotland Water Authority representative recommended that all businesses should have storage capacity for 24 hours' supply. West of Scotland Water Authority also tries to help with bottled water.

ISSUE: Man-hole covers.

Evidence/Enquiry: Who is responsible for man-hole covers? The customer has reported a problem to the local council but nothing has been done.

Action/Response: The West of Scotland Water Authority representative confirmed that they are responsible for their man-hole covers. He offered to investigate the problem further, and report to the customer. He asked the customer to help identify the main areas of the problem.

ISSUE: Field troughs.

Evidence/Enquiry: Are there any concessions for farmers who have field troughs but no cattle due to foot and mouth?

Action/Response: The West of Scotland Water Authority representative will check with the billing section and inform the customer.

ISSUE: Septic tank emptying.

Evidence/Enquiry: The Consultative Committee member asked whether customers are satisfied with the septic tank emptying service provided by West of Scotland Water Authority.

Action/Response: The customers confirmed that they are satisfied.

West of Scotland Consultative Committee quarterly reports on members' consultations

1 June 2000–30 September 2000

No report.

1 October 2000–31 December 2000

Groups consulted:

Ardentinny Community Council
Arran Library
Church Community: West End, Glasgow
RSPB member
Saltcoats Community Learning Centre

Issues raised:

- Many customers have no problems with West of Scotland Water Authority.
- There is a lack of awareness of the Commissioner's office.
- The possibility of having a choice of supplier for water services as a result of the Competition Act was welcomed.
- Many people falsely assume that metering will soon be compulsory for domestic customers.
- Billing inaccuracies are both inconvenient and distressing for customers.
- Some customers are concerned that silting will lower the capacity of reservoirs.
- Consultation with local communities was welcomed and considered very important.
- Some customers are concerned that there is significant ecological disturbance when the water authorities develop new sites.
- Increased charges are always a concern to customers.
- There is a lack of awareness of the possible benefits of metering.

Other activities:

None.

1 January 2001–31 March 2001

Groups consulted:

Ardentinny Community Council
One member of the public
Residents of Ardentinny, Argyll

Issues raised:

- There is still a lack of awareness of the Commissioner's office.
- West of Scotland Water Authority help-line staff do not always have the relevant information when there is a supply interruption. For example, in one instance they did not know which villages were affected.
- West of Scotland Water Authority is sometimes considered not to understand rural issues and to only concentrate on Glasgow.
- Concern was expressed about the effect of supply interruptions on the elderly.

Other activities:

None.

1 April 2001–30 June 2001

No report.

1 July 2001–30 September 2001

Groups consulted:

Balgrayhill Community Council
Cardross Community Council
Cowdenknowes Community Council
Garrowhill Community Council
Kelvinside Community Council
Kilmacolm Community Council
One member of the public
Port Glasgow (Lower East) Community Council
Rhu Community Council

Issues raised:

- Cornalees Bridge Visitors Centre in Muirsheil Country Park has been closed to the public this year because there is no water supply. The centre does not have a connection to the public supply but in former years water has been brought to the centre by tanker. Local primary school children will be unable to use the centre in the new term.
- Flooding: Floodwater from heavy rainfalls in the hills around Greenock has caused disruption on the roads.
- Metering: Customers are concerned that metered customers will have to be metered in the future. They think that this would not be a good idea.
- Water quality: Customers complained of a metallic taste in the water supply. West of Scotland Water Authority has conducted tests of the water. The problem has not been rectified.
- Customers consider the water quality in the Garrowhill area of Glasgow to be third rate, and charges to be very high for the poor service.
- Lead piping: Customers are concerned that there are no grants available to replace lead supply pipes.
- Investment: Customers accept that significant investment is needed to update Glasgow's water and sewerage systems.
- Leakage: Customers (tenants of private landlords) complained of frequent leaks at the junction between the water main and their supply pipe.
- Some customers are concerned about public safety at sites where West of Scotland Water Authority is making repairs, and about the professionalism of the workmen, particularly in reinstatement of roads and land.
- Billing methods: Some customers would welcome charging 'deals' similar to those available from other utility providers. Some customers are happy with the current method of charging using Council Tax bands.
- Water Quality: Customers in Rhu have experienced problems with brown water that stains washing. West of Scotland Water Authority has tested the water and say that it is safe to be drunk. The customers do not trust this.
- Customers are concerned about the amount of sewage and rubbish that is washed up on beaches.
- One customer was concerned that the water industry might be privatised.

Other activities:

- A member attended the commissioning of Ayr pumping station by Ross Finnie, MSP.

NON-DOMESTIC CUSTOMERS

a) Background

The non-domestic sector has historically provided some 50% of the Scottish water industry's income. I recognise the significance of this and the growing expectation of customers who wish to exercise greater control, not just over the economics, but also over the nature of the service provided.

I asked Neil Menzies, to help me establish firstly a consultation programme with representatives of non-domestic customers and second, a large user panel. The large user panel has met three times.

Both the consultation programme and the large user panel provide me with a useful insight into the service provided and the customer's aspirations and expectations for the future of the service. The consultation with large users in particular has provided me with views about choice of service, the evidence for competitive activity in the service supply and customer service performance.

Looking forward to this Review period, there was an expectation that the non-domestic sector would contribute a lower proportion of income than the 50% that it has in the past, as consumption and service use drops and greater cost reflectivity is seen in the prices levied (and negotiated in the case of large users).

The customer service improvements sought by non-domestic customers include, in particular, billing performance and notice of service interruptions.

In all, the non-domestic sector is looking for service improvements similar to those that have been seen in the best of wider utility provision.

b) Key consultation issues and summary of responses

i) Customer service provision

Current billing and metering arrangements were considered to be of poor quality. A number of examples were given:

- Accuracy of bills – customers have to spend significant time addressing billing accuracy issues.
- Timing of bills – customers reported receiving bills very irregularly and one customer reported receiving no bill in the last year.
- Billing transparency – customers stated that the bills received were often confusing and it was difficult to determine exactly what was being charged for.
- Meter reading delays – customers stated that the water authorities were not reading meters when customers asked them to do so and also these readings were not carried out regularly at appropriate time intervals.
- Consumption monitoring - customers explained that they found it difficult to read their meters and therefore monitor consumption.
- Meter faults – customers reported that they had experienced meters of the wrong size being fitted and significant difficulties in having meters changed.

ii) Key account management

Customer relationship management was thought to have improved over the year with the appointment of Key Account Managers to selected large users. This initiative has been welcomed but there remain a number of areas requiring further development and it is imperative that the scheme be extended. A number of issues were highlighted in this area during the consultation including:

- Lack of contact – customers stated that Key Account Managers rarely contacted them and they therefore believed that they were not necessarily receiving the best possible service.
- Identity unknown – it is of significant concern that a number of customers did not even know the identity of their appointed Key Account Manager.
- Scope and resources – customers reported that they

understood that one Key Account Manager was responsible for looking after over 50 businesses. They considered that this was spreading resources too thinly to be of any real benefit to customers.

- Consistency - multi-site customers reported having different Key Account Managers at different sites and felt that this caused problems with a lack of consistency of response and policy interpretation.
- Lack of awareness – it is of significant concern that a number of customers were unaware of the existence or availability of the Key Account Management service.

iii) Future price expectations

Consultees were pleased to discover that there was an ongoing rebalancing of water charges from non-domestic to domestic customers. Many were aware that in the past industry and commerce had subsidised the domestic sector. Respondents also felt that greater transparency in charging structures and the clear publication of tariffs was essential. A number of other more specific issues were also highlighted including:

- Trade effluent – customers wanted greater transparency and explanation of the application and calculation of charges based on the Mogden formula.
- Awareness – customers believed that any increase in charges should be more widely publicised than in the past to increase awareness.
- Farm standing charges – customers in the farming community expressed their view that only one standing charge should be levied for each farm, irrespective of the number of meters involved. There is general disquiet in farming communities about the charging arrangements for water to field troughs and this issue should be addressed.
- Comparison was drawn between the position of the water authorities and that of other utilities where water authorities have the right of access with no compensation being paid. [explain – do you mean 'water authorities have right of access, with no compensation payable'.
- Tariff reductions – some customers felt that crofts and small farms should be offered reduced tariffs
- Charge increase concerns – many customers voiced their concern about the imminent rise in waste water charges.

iv) Competition in the Scottish water industry

Issues raised by the development of competition in the Scottish water industry were few. However, a number of companies stated that approaches by competitors had fallen in the past year and several companies were unaware of the introduction of the Competition Act 1998. In a limited number of cases, third parties have been invited by customers to act for them in the areas of water management and negotiating with their water authorities. There is a general belief, however, that competition is necessary to control price escalation in the industry.

v) Summary

Customer service has improved markedly since the creation of the three water authorities in Scotland. The establishment of Key Account Managers, large user tariffs and negotiated deals offer clear evidence of the beginnings of this improvement. There remain, however, a number of areas where considerable improvements could be made.

Large water users and representatives of other customer groups have indicated that the general level of service needs to be improved further, as does the level of customer choice available. The introduction of the Competition Act 1998 has meant that a number of customers have explored the possibility of leaving the public network. Such actions would inevitably impact on the charges to be levied on all other customers.

It is clear from our research that non-domestic customers require and expect particular services to be provided by their water authority. For many large customers, the service provided, and the water authorities' responsiveness to their needs, is almost as important as the absolute price charged.

vi) Analysis of questionnaires

The non-domestic sector in Scotland covers a vast array of sizes and types of business and it would unfortunately have been impossible and impractical to contact each business individually. Therefore representative bodies such as Chambers of Commerce, the Federation of Small Businesses, National Farmer's Union and various trade associations were targeted (list given below). These organisations were asked to gather the views of their members and a questionnaire was designed for this purpose. The questionnaire returns were analysed to show

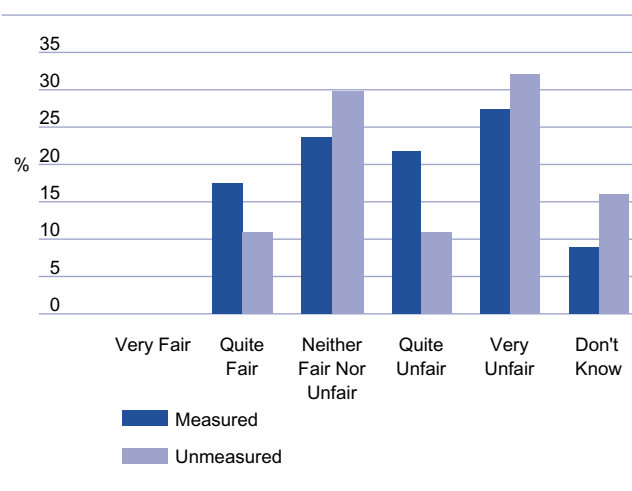
the general views of the non-domestic sector. Many of the representative bodies also participated in meetings with the Commissioner and his team to provide greater insight into their views, needs and concerns.

- Scottish Enterprise
- Scottish Engineering
- Chemical Industries Association
- Scottish Tourism Forum
- COSLA
- Scottish Building Employers Federation
- CBI Scotland
- National Farmers Union
- Scottish Landowners Federation
- Institute of Directors
- Edinburgh Chamber of Commerce
- Scotch Whisky Association
- Highlands and Islands Enterprise
- Crofters Commission
- Federation of Small Businesses
- Scottish Consumers Council

119 questionnaires were returned and this provided some very valuable insights.

Regarding the fairness of charges, the questions asked and responses received were as shown in Figure E1.

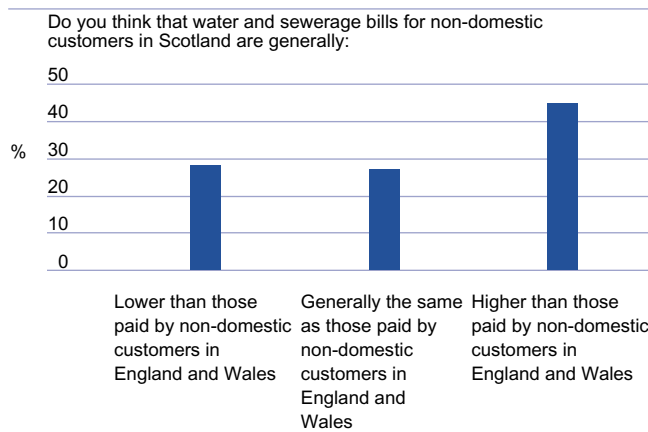
Figure E1: Perceived fairness of charges



Perhaps unsurprisingly, it appears that whichever system is used, the majority of people feel their charges are unfair, and no-one believes their charges are very fair.

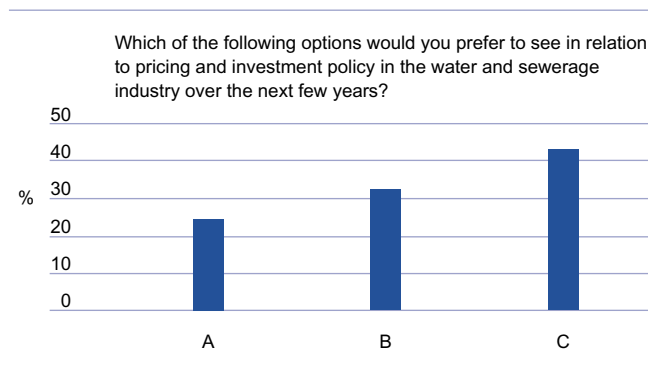
Considering the charge levels in comparison with the rest of the UK it seems the majority believe that they are charged more than their counterparts elsewhere, as Figure E2 shows.

Figure E2: Perception of bill levels in Scotland compared to England and Wales



Respondents appear to understand that significant investment is required and the majority would accept an initially significant price rise (see Figure E3).

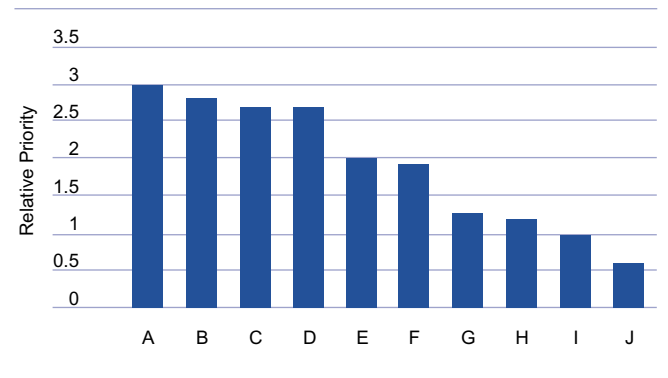
Figure E3: Preferred pricing and investment options



A	Prices rise in line with inflation, some quality and environmental standards are not met, the quality of infrastructure remains poor (increased risk of water leaks/service failures)
B	Prices rise by more than inflation, most quality and environmental standards are met, the quality of infrastructure remains quite poor (risk of water leaks/service failures remains)
C	Prices rise initially by a number of times more than the rate of inflation, legal and environmental standards are met, the quality of infrastructure improves to sustainable standards of service reliability

Respondents have different priorities for investment, as shown in Figure E4.

Figure E4: Investment priorities



A	Better sewage treatment to improve sea bathing water cleanliness
B	Introducing water efficiency techniques
C	Improving water supply (reducing interruptions etc)
D	Better sewage treatment to improve river cleanliness
E	Improving water quality
F	Increasing sewer capacity to reduce flooding
G	Improving sewage treatment works to reduce odours
H	Improving customer services and care
I	Subsidising those on lower incomes/voluntary organisations/charities
J	Extending installation of water meters

This suggests that most business customers are very concerned about the environment, with their priorities being for investment resulting in cleaner rivers and beaches and reducing water consumption.

There is apparent concern about the level of interruptions and supply constancy, it may be that this relates to businesses that require water for manufacturing or those that require large amounts for domestic use, such as the hotel industry.

The reasons why respondents would change supplier show different priorities, however, as Figure E5 shows.

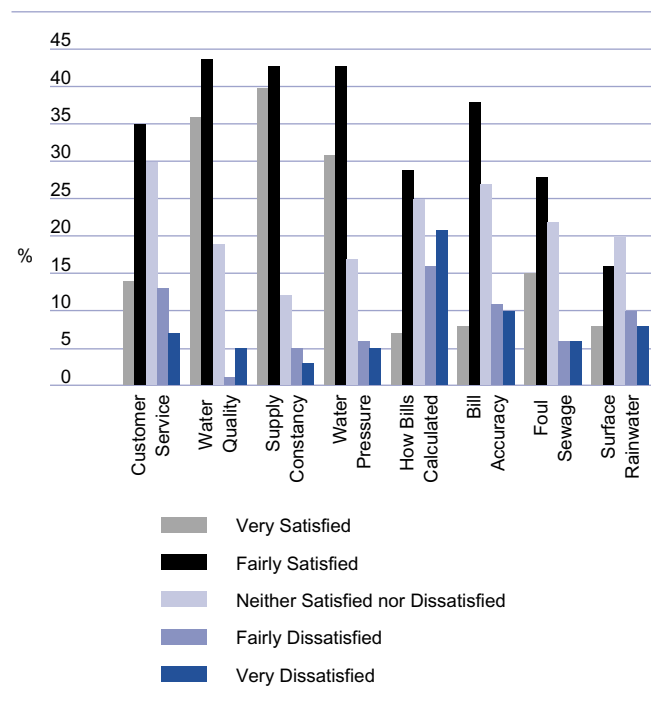
Figure E5: Reasons to change supplier



Clearly the issue that would encourage a company to switch suppliers is the opportunity of receiving a lower bill. This is supported by the rating given to the availability of different tariff packages (it can be assumed that people would prefer a tariff package which reduces their overall bill). Water quality and reliability of supply are also very important, this may be attributable to specific needs in specific business types, where a company may need very clean water. Alternatively the requirement could be for water that has received no treatment at all, if it is for purposes such as cooling.

It is interesting to compare these stated investment priorities and reasons to switch supplier with the levels of satisfaction with the service currently received.

Figure E6: Levels of satisfaction with current service



Clearly the greatest dissatisfaction is with how bills are calculated. This finding would support the assertion that the level of charges and the system of charges are difficult to differentiate, and that negative feelings tend to focus on the level charged.

It is apparent that complaints about charges are compounded by dissatisfaction with the accuracy of bills sent out.

Although respondents cited water quality and supply reliability as reasons why they would switch suppliers, it does not appear that they are currently dissatisfied to any great extent. It may be that innovation rather than improvement is what is necessary.

Section 9: Appendix F: Regulatory 'WIC Letters'

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 will be 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 will be used to monitor revenue from households and will aid 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 – WIC 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 2001/2002 – request for authorities to submit proposed scheme of charges for the following year and supporting data.
WIC 8	Dates for submission of information to the WIC – clarification on timing and content of WIC information requirements following on from the Information Project.
WIC 9	Non-Domestic Debt Analysis – request for analysis of non domestic debt figures to allow WIC to monitor the financial impact of debt levels and assess the efficiency of the authority's collection systems.
WIC 10	Information Project Action Plan – WIC feedback to Authorities on the content of their Action Plans.
WIC 11	Not used.
WIC 12	New Opex and Spend to Save – WIC's criteria for assessing Water authority's case for additional expenditure on new opex and 'Spend to Save' initiative.
WIC 13	Efficiency Analysis – Impact of PPP Schemes on controllable Opex
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 WIC.
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 Opex.
WIC 21	Critical Information for Strategic Review of Charges – request for information on WIC1, Inter Authority trading, value chain analysis – retail and capital investment.

27 April 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC1: 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 (i.e. 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 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,

ALAN D A SUTHERLAND
Commissioner

2 May 2000

To Chief Executive of: East of Scotland Water Authority
 North of Scotland Water Authority
 West of Scotland Water Authority

WIC2: INVESTMENT PROGRAMME MONITORING

In my letter of 6 March I advised the expected level of investment in 2000/2001 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	<u>£97million</u>	<u>£89million</u>	<u>£96million</u>
> 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	<u>£97million</u>	<u>£88million</u>	<u>£96million</u>
> 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 2000-2003, 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 Environment 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 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

ALAN D A SUTHERLAND
Commissioner

22 May 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC3: 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

ALAN D A SUTHERLAND
Commissioner

Encs

08 Aug 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC4: 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

ALAN D A SUTHERLAND
Commissioner

WIC 4 : HOUSEHOLD DATA REQUEST

Council

Date Produced

Water & Wastewater Reduction	Council Tax Benefit	Total Households Connected				Households receiving Water and Wastewater charge				Households receiving Water charge only				Households receiving Wastewater charge only			
		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
Band A	No Benefit																
	Partial Benefit																
	Full Benefit																
Band B	No Benefit																
	Partial Benefit																
	Full Benefit																
Band C	No Benefit																
	Partial Benefit																
	Full Benefit																
Band D	No Benefit																
	Partial Benefit																
	Full Benefit																
Band E	No Benefit																
	Partial Benefit																
	Full Benefit																
Band F	No Benefit																
	Partial Benefit																
	Full Benefit																
Band G	No Benefit																
	Partial Benefit																
	Full Benefit																
Band H	No Benefit																
	Partial Benefit																
	Full Benefit																

WIC 4 : HOUSEHOLD DATA REQUEST

Council

Date Produced

Debt	1996/97		1997/98		1998/99		1999/00		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 1999/00	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	£	£	£	£	£
Band A No Benefit													
Band A Partial Benefit													
Band A Full Benefit													
Band B No Benefit													
Band B Partial Benefit													
Band B Full Benefit													
Band C No Benefit													
Band C Partial Benefit													
Band C Full Benefit													
Band D No Benefit													
Band D Partial Benefit													
Band D Full Benefit													
Band E No Benefit													
Band E Partial Benefit													
Band E Full Benefit													
Band F No Benefit													
Band F Partial Benefit													
Band F Full Benefit													
Band G No Benefit													
Band G Partial Benefit													
Band G Full Benefit													
Band H No Benefit													
Band H Partial Benefit													
Band H Full Benefit													

WIC 4 : HOUSEHOLD DATA REQUEST

Date Produced

Debt	1996/97	Properties in Debt	Nr	£	1997/98	Properties in Debt	Nr	£	1998/99	Properties in Debt	Nr	£	1999/00	Properties in Debt	Nr	£	Debt Outstanding 2000/01						
																	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)
Number of Customers	£	Outstanding debt at 31/3/00 attributable to 1996/97	Nr	£	Outstanding debt at 31/3/00 attributable to 1997/98	Nr	£	Outstanding debt at 31/3/00 attributable to 1998/99	Nr	£	Outstanding debt at 31/3/00 attributable to 1999/00	Nr	£	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)	£

21 June 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC5: 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 quarterly. This report is intended to be top-line summary of each water authorities' 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 quarter 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

Quarter 1 = April 1 – June 30	Report by Friday 11 August 2000
Quarter 2 = July 1 – August 31	Report by Friday 13 October 2000 (two month report)
Quarter 2 = September 1 – September 30	Report by Friday 10 November 2000 (one month report)
Quarter 3 = October 1 – December 31	Report by Friday 16 February 2001
Quarter 4 = January 1 – March 31	Report by Friday 11 May 2001
Quarter 1 = April 1 – June 30	Report by Friday 10 August 2001

WIC Returns Performance Report

September 1 – March 31 Report by Friday 11 May 2001
(seven month report)

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

ALAN D A SUTHERLAND
Commissioner

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

WIC6: 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

ALAN D A SUTHERLAND
Commissioner

6 October 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC7: SCHEME OF CHARGES 2001/2002

(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: £367.3million], 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 2000/2001 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

ALAN D A SUTHERLAND
Commissioner

10th November 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC8: 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 **99-00 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 01.
- 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

ALAN D A SUTHERLAND
Commissioner

20 December 2000

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC9: NON DOMESTIC DEBT ANALYSIS

In the WIC1 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 WIC1 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 WIC1 submission. These column headings are similar to both the WIC4 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.

ALAN D A SUTHERLAND
Commissioner

WIC 9 : NON-DOMESTIC DEBT REQUEST

Per WIC 1	1996/97	1997/98	1998/99	1999/00	Debt Outstanding 2000/01										
Customer Name/ Business sector/ Banding															
Per WIC 1	£	£	£	£	£	£	£	£	£	£	£	£	£	£	
					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 1999/00	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)

28 February 2001

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC10: 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 Scotland-wide 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 £8million and £10million. 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,

ALAN D A SUTHERLAND
Commissioner

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

WIC12: 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,

ALAN D A SUTHERLAND
Commissioner

07 May 2001

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC13: 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,

ALAN D A SUTHERLAND
Commissioner

Table A:

Total length of sewers and other assets to be made redundant or transferred to PPP schemes

PPP scheme Km/Nr	Large Diameter (>600mm)	Medium Diameter (>150<600mm)	Small Diameter (≤150mm)	Other
NSW				
Highland				
Tay				
Aberdeen				
Moray				
WSW				
Daldowie/ Shieldhall				
Dalmuir				
Meadowhead, Stevenson and				
Inverclyde				
ESW				
Almond Valley, Seafield and				
Esk Valley				
Levenmouth				

Table B:

OPEX (1999–00) 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

WIC14: SPECIAL AGREEMENTS FOR LARGE CUSTOMERS

I brought to your attention the need for transparency of Large User Tariffs During the 2001/2002 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

ALAN D A SUTHERLAND
Commissioner

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

WIC15: 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: £459.8m, North: £595.3, West: £697.8], before the addition of a Spend to Save allowance of [East: £65.9m, North: £43.2, West:95.5]. 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

WIC16: 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 Option (£000)	Cost Not Currently Included (£000)	Total Cost Per Capita Connected (£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.

29 May 2001

To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

WIC17: 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,

ALAN D A SUTHERLAND
Commissioner

30 May 2001

To Chief Executive of: East of Scotland Water Authority
 North of Scotland Water Authority
 West of Scotland Water Authority

WIC18: 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

ALAN D A SUTHERLAND
 Commissioner

Quality and Standards Sign Off Table

Reference	Project Title	2002-06 Expenditure £000	Investment Purpose			Water		Wastewater		Other %	Rural/ Non Rural %
			Base (%)	Quality (%)	Growth (%)	Infra (%)	Non infra (%)	Infra (%)	Non infra (%)		
(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

ALAN D A SUTHERLAND
Commissioner

06 June 2001

To Chief Executive of: East of Scotland Water Authority
 North of Scotland Water Authority
 West of Scotland Water Authority

WIC20: 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,

ALAN D A SUTHERLAND
 Commissioner

	Owned by water authority					Rented by water authority				
	Location	Nr employees	Activity	Market value	Avg. OPEX	Location	Nr employees	Activity	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

WIC21: 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 2006-2010 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.

Section 9: Appendix G

References, Legislation and Further Reading

a) References

- Anglian Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Anglian Water Trust Fund, *Annual Report*, 2000.
- Babtie Environmental, *Report and opinion on the scope for widescale adoption of lower cost new technology and practices in the water industry*, Ofwat, 1998.
- Bournemouth and West Hampshire Water plc, *Annual Report and Accounts*, 1999 and 2000.
- Bristol Water plc, *Annual Report and Accounts*, 1999 and 2000.
- Byatt, I., 'Competition in the water and sewerage industry', in *Competition in regulated industries*, edited by Helm, D., and Jenkinson, T., Oxford University Press, 1998.
- Cabinet Office Performance and Innovation Unit, *Adding it up: Improving analysis and modelling in central government*, Stationery Office, 2000.
- Cadbury Committee, *The financial aspects of corporate governance*, Professional Publishing Ltd, 1992.
- Cambridge Water Company plc, *Annual Report and Accounts*, 1999 and 2000.
- Dee Valley Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Dewar, D., Secretary of State for Scotland, *Oral statement on the water industry review*, House of Commons, 16 December 1997.
- DTI, *The social effects of liberalisation: the UK experience. Launching a common European energy market*, 2000.
- DWI, *Drinking water 2000: A report by the Chief Inspector*, 2000.
- East of Scotland Water Authority, *Annual Report and Accounts*, various 1996-2000.
- Greenbury, R., *Directors' remuneration: Report of a study group chaired by Sir Richard Greenbury*, Gee Publishing Ltd, 1995.
- Hampel Committee, *Corporate governance: Final report*, Gee Publishing, 1998.
- Kay, J., and Vickers, J., 'Regulatory reform in Britain' in *Economic Policy*, 19, 1988.
- Mid Kent Water plc, *Annual Report and Accounts*, 1999 and 2000.
- Miller-Bakewell, R., *O and M Markets*, Merrill Lynch, 2000
- North of Scotland Water Authority, *Annual Report and Accounts*, various 1996-2000.
- North of Scotland Water Authority, *Report on consultation of relief of charges*, 2000.
- Northumbrian Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- North West Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Ofgem, *A review of the development of competition in domestic gas and electricity supply*, 2000.
- Ofgem, *Experience of the competitive market, the domestic electricity and gas markets: Research study conducted for Ofgem by Mori*, 2001.
- Ofwat, *Assessing the scope for future water and sewerage company efficiency*, 1998.
- Ofwat, *Letters to managing directors and regulatory directors* (MD165, RD2/99) 1999.
- Ofwat, *Levels of service for the water industry in England and Wales, 2000-01 Report*, 2001.
- Ofwat, *1999 Periodic Review: Future water and sewerage charges 2000-05: Final Determinations*, 1999.
- Ofwat, *2001-2002 Report on tariff structure and charges*, 2001.
- Ofwat, *Water and sewerage services unit costs and relative efficiency 1999-2000 Report*, 2000.
- Porter, M., *Competitive strategy, techniques for analysing industries and competitors*, The Free Press, 1980.
- Portsmouth Water plc, *Annual Report and Accounts*, 1999 and 2000.
- The Scottish Charity Law Review Commission, *Your views matter*, 2000.
- The Scottish Charity Law Review Commission, *Report: Charity Scotland*, 2001.
- Scottish Executive, *Affordability of water and sewerage charges: A consultation paper*, 2000.
- Scottish Executive, *Affordability of water and sewerage charges: Consultation report*, 2001.
- Scottish Executive Press Release SEO635/99, 16 September 1999.
- Scottish Executive Press Release SEO1285/2001, 17 May 2001.

- Scottish Executive, *Water Industry Commissioner for Scotland: Guidance from Scottish Ministers*, 1999.
- Scottish Executive, *The Water Services Bill: The Executive's proposals*, 2001.
- Scottish Executive, *Water quality and standards 2002-2006: A consultation paper*, 2001.
- Scottish Executive, *Water quality and standards: Investment priorities for Scotland's water authorities 2002-2006*, 2001.
- Scottish Office: *Scottish water industry review outcome*, The Stationery Office, 1997.
- Scottish Office: *The Scottish water authorities: Management and financial memoranda*, The Stationery Office, 1997.
- Severn Trent Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Southern Water Services Ltd, *Annual Report and Accounts*, 1999 and 2000.
- South Staffordshire Water plc, *Annual Report and Accounts*, 1999 and 2000.
- South West Water Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Sutton and East Surrey Water plc, *Annual Report and Accounts*, 1999 and 2000.
- Thames Water plc, *Annual Report and Accounts*, 2000.
- Thames Water Utilities Ltd, *Annual Report and Accounts*, 1999 and 2000.
- Transport and Environment Committee 9th Report, *Report on inquiry into water and the water industry, Volume 1: Report*, The Stationery Office, 2001.
- Transport and Environment Committee 9th Report, *Report on inquiry into water and the water industry, Volume 2: Evidence*, The Stationery Office, 2001.
- Wessex Water Services Ltd, *Annual Report and Accounts*, 1999 and 2000.
- West of Scotland Water Authority, *Annual Report and Accounts*, various 1996-2000.
- Yorkshire Water Services Ltd, *Annual Report and Accounts*, 1999 and 2000.

www.glascymru.com

www.npower.com/html/juiceandwindpower_4467.htm

www.nwl.co.uk/northum/default2.asp

www.scotland.gov.uk/library3/environment/sesg-06.asp#1

www.sepa.org.uk/data/discharge_compliance/index.htm

b) Legislation

- Competition Act 1998
- Competition and Service (Utilities) Act 1992
- Control of Pollution Act 1974
- Drinking Water Directive (98/83 EC)
- Electricity Act 1989
- Gas Act 1986
- Gas Act 1995
- Local Government etc (Scotland) Act 1994
- Oil and Gas (Enterprise) Act 1982
- Sewerage (Scotland) Act 1968
- Urban Waste Water Treatment Directive 91/271/EEC
- Utilities Act 2000
- Water Act 1983
- Water Framework Directive 2000/60/EC
- Water Industry Act 1999
- Water Supply (Water Quality) Regulations 1989
- Water (Scotland) Act 1980

c) Further reading

- Begg, D., Fischer, S., Dornbusch, R., *Economics (Forth Edition)*, McGraw-Hill Book Company, 1994.
- Envirotec*, Peebles Media Group, various issues (1999-2001).
- Europe Economics and Crafts, N., *Water and sewerage industries' general efficiency and potential for improvement: An update*, Ofwat, 1999.
- Europe Economics and Crafts, N., *Water and sewerage industries' general efficiency and potential for improvement (Final Report)*, Ofwat, 1998.
- 'Global Water Report', in the *Financial Times*, various issues (1999-01).
- Inter-Regulatory Working Group, *The role of regulatory accounts in regulated industries, A joint consultation paper* by the Directors General of Oftel, Ofgem, Ofwat, Electricity & Gas Supply (Northern Ireland), Rail Regulator and Civil Aviation Authority, 2001.
- London Economics, *Water pricing: The importance of long run marginal costs*, Ofwat, 1997.
- Offer, *Reviews of public electricity suppliers 1998 to 2000, PES business plans consultation paper*, 1998.
- Offer and Ofgas, *Separation of businesses: Proposals and consultation*, 1999.
- OFT, *The Competition Act 1998: The application in the water and sewerage sectors*, 2000.
- Ofwat, *1997-98 Report on leakage and water efficiency*, 1998.
- Ofwat, *1997-98 Report on water and sewerage service operating costs and efficiency*, 1998.
- Ofwat, *1998-1999 Report on financial performance and expenditure of the water companies in England and Wales*, 1999.
- Ofwat, *1998-1999 Report on leakage and water efficiency*, 1999.
- Ofwat, *1998-1999 Report on water and sewerage service unit costs and relative efficiency*, 2000.
- Ofwat, *1999-2000 Report on tariff structure and charges*, 1999.
- Ofwat, *1999 Periodic Review: Capital works unit costs in the water industry*, 1998.
- Ofwat, *1999 Periodic Review: Final Determinations: Future water and sewerage charges 2000-05*, 1999.
- Ofwat, *1999 Periodic Review: Financial model rule book: A technical paper*, 1998.
- Ofwat, *1999 Periodic Review: Informing the final decisions on raising the quality 2000-2005, An open letter to the Secretary of State for the Environment, Transport and the Regions and the Secretary of State for Wales*, 1999.
- Ofwat, *1999 Periodic Review: Prospects for Prices: A consultation paper on strategic issues affecting future water bills*, 1998.
- Ofwat, *1999 Periodic Review: Setting price limits for water and sewerage services: The framework and business planning process for the 1999 periodic review*, 1998.
- Ofwat, *1999 Periodic Review: Tariff rebalancing and the tariff basket: A Consultation Paper*, 1997.
- Ofwat, *1999 Periodic Review: The proposed framework and approach to the 1999 Periodic Review*, 1997.
- Ofwat, *Annual Report 2000-01 of the Director General of Water Services*, The Stationery Office.
- Ofwat, *Annual Return 2001-05: A consultation paper on monitoring companies' performance*, 2000.
- Ofwat, *Approval of companies' charges schemes 2000-2001: A Consultation Paper*, 1999.
- Ofwat, *Approval of companies' charges schemes in 2001-2002: Ofwat's conclusions on the consultation*, 2000.
- Ofwat, *Approval of companies' charges schemes 2001-2002: A Consultation Paper by the Director General of Water Services*, 2000.
- Ofwat, *Comparing the performance of the water companies in England and Wales in 1998-99 with water enterprises in other industrialised countries*, 2000.
- Ofwat, *Director General's Annual Report 1999-2000*, The Stationery Office.
- Ofwat, *Financial performance and expenditure of the water companies in England and Wales 1999-2000: Report*, 2000.
- Ofwat, *Financial performance and expenditure of the water companies in England and Wales 2000-2001: Report*, 2001.
- Ofwat, *Leakage and the efficient use of water 1999-2000: Report*, 2000.
- Ofwat, *Leakage of water in England and Wales*, 1996.
- Ofwat, *Linking service levels to prices: A Consultation Paper*, 2001.

- Ofwat, *New ownership structures in the water industry: A consultation paper by the Directors General of Ofwat and Ofgem*, 2000.
- Ofwat, *Paying for Quality, The political perspective*, 1993.
- Ofwat, *Report on company performance in 1995-96*.
- Ofwat, *Report on company performance in 1997-98*.
- Ofwat, *Report on company performance in 1998-99*.
- Ofwat, *Report on company performance in 1999-2000*.
- Ofwat, *Response to the Government's consultation paper: Competition in the water industry in England and Wales*, 2000.
- Ofwat, *The 2001 review of the regulatory accounting guidelines*, 2001.
- Ofwat, *Tariff structure and charges 2000-01 Report*, 2000.
- Ofwat, *Tariff structure and charges 2001-02 Report*, 2001.
- Ofwat, *The current state of market competition*, 2000.
- Ofwat, *The proposed acquisition of Dŵr Cymru Cyfyngedig by Glas Cymru Cyfyngedig: A position paper by Ofwat*, 2001.
- Ofwat, *The proposed acquisition of Mid Kent Holdings plc by Swan Capital Investments: A consultation paper*, 2001.
- Ofwat, *The proposed restructuring of the Kelda Group: A consultation paper by the Director General of Water Services*, 2000.
- Ofwat and Ofgem, *The proposed takeover of Hyder plc by WPD Limited: A joint consultation paper by the Directors General of Ofwat and Ofgem*, 2000.
- Ofwat, *The proposed takeover of Thames Water plc by RWE AG: A consultation paper by Ofwat*, 2000.
- Ofwat, *The role of long run marginal costs in the provision and regulation of water services*, 2001.
- Ofwat, *Transfer pricing in the water industry: Regulatory Accounting Guideline 5.03*, Issued April 1997, revised March 2000.
- Ofwat, *Information Notes*, various.
- Ofwat, *Ofwat Press Releases*, various.
- Ofwat, *Managing Director Letters*, various.
- Ofwat, *Regulatory Director Letters*, various.
- Ofwat, *Reporting Requirements*, 1999 July Return.
- Ofwat, *Water and sewerage service unit costs and relative efficiency 1999-2000 Report*, 2000.
- Porter, M. E., *Competitive advantage: Creating and sustaining superior performance*, The Free Press, 1998.
- Porter, M. E., *Competitive strategy: techniques for analyzing industries and competitors*, The Free Press, 1980.
- Postcomm, *Promoting effective competition between postal operators: A consultation document*, 2000.
- SEPA, *State of the Environment Report*, 1999.
- SEPA, *Scottish Bathing Waters: 1998 Bathing Water Quality Results*, 1998.
- Utilities Journal*, Oxera, 1999-2000.
- Utility Week*, Reed Business Publications, 1999-2000.
- Water & Sewerage Journal*, McMillan-Scott, 1999-2000.
- Water Services*, Turret RAI, 1999-2000.
- WS Atkins, *The social impact of water metering: Summary*, Ofwat, 1992.